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HOSPITAL BUILDING NOTE

ACCIDENT AND EMERGENCY DEPARTMENT

22

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DEPARTMENT OF HEALTH
AND SOCIAL SECURITY

HOSPITAL BUILDING NOTE NO. 22

Accident and Emergency Department

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Appendix II

Amendments and additions to the text are indicated by a vertical line in the margin

Building Notes recommend the standards of accommodation and services for hospital departments which the Department of Health and Social Security consider it reasonable to provide. Each Building Note contains a Cost Note from which may be derived a Departmental Cost Allowance appropriate to the department. Hospital Boards are at liberty to depart from the design recommendations given in Building Notes provided that they are satisfied that the standards of accommodation and services they adopt are adequate. The Departmental Cost Allowance, however, is to be regarded as the maximum sum of money available for the department and it should not be exceeded. Hospital Boards are encouraged to produce designs for the provision of appropriate accommodation and services at a cost less than the Departmental Cost Allowance.

An addendum to Appendix E of Hospital Building Note No. 2, *The Cost of Hospital Buildings*, which sets out cost recommendations for the Accident and Emergency Department, is supplied with this Building Note.

Hospital Building Note No. 2 — Appendix E

Accident and Emergency Department

Hospital Building Note No. 22

The scales of accommodation and cost recommendations are applicable to accident and emergency departments in district general or teaching hospitals.

A. Basic accommodation

(*a*) *Departmental accommodation*

- (i) Entrance for stretcher patients
- (ii) Entrance for ambulant patients
- (iii) Reception office and discharge office
- (iv) Porters' room or station
- (v) Trolley and wheelchair store or area
- (vi) Waiting areas
  - (*a*) Main waiting
  - (*b*) Sub-waiting
- (vii) Patients' lavatories
- (viii) Interview room
- (ix) Staff accommodation
  - (*a*) Staff lavatories
  - (*b*) Duty doctors' room
  - (*c*) Sister's room
  - (*d*) Nurses' duty room
  - (*e*) Consultants' office
- (x) Resuscitation room
- (xi) Examination and treatment rooms/cubicles
- (xii) Clean utility room
- (xiii) Dirty utility room
- (xiv) Sluice and test room
- (xv) Cleansing room
- (xvi) Storage
- (xvii) Cleaners' room
- (xviii) Circulation space necessary for the above accommodation

(*b*) *Minor operating theatre suite and plaster room*

- (i) Operating theatres
- (ii) Anaesthetic room
- (iii) Scrub-up and gowning area
- (iv) Sink or disposal room
- (v) Sterile supply room
- (vi) Changing rooms for theatre staff
- (vii) Storage
- (viii) Plaster room
- (ix) Plaster room stores, etc.
  - (*a*) Splint store
  - (*b*) Plaster store
  - (*c*) Plaster mould store
  - (*d*) Plaster disposal lobby
- (x) Sub-waiting space for plaster room and theatres
- (xi) Cleaners' room
- (xii) Plant room
- (xiii) Circulation space necessary for the above accommodation

(*c*) *Preparation, recovery and short-stay unit*

- (i) Bed areas
- (ii) Changing cubicles
- (iii) Sluice and disposal room
- (iv) Clean utility area
- (v) Nurses' station
- (vi) Pantry
- (vii) Patients' lavatories and bathroom
- (viii) Storage
- (ix) Circulation space necessary for the above accommodation

(*d*) *Orthopaedic and fracture clinic* (if required)

- (i) Consulting rooms
- (ii) Examination and treatment cubicles
- (iii) Plaster room
- (iv) Plaster room stores, etc.
  - (*a*) Splint store
  - (*b*) Plaster store
  - (*c*) Plaster mould store
  - (*d*) Plaster disposal lobby
- (v) Sub-waiting space
- (vi) Storage
- (vii) Circulation space necessary for the above accommodation

(*e*) *Teaching hospital increment*

- (i) Teaching room
- (ii) Examination and treatment rooms/cubicles
- (iii) Students' room
- (iv) Circulation space

B. Additional accommodation

(*a*) *Diagnostic x-ray unit*

- (i) Patients' undressing cubicles
- (ii) Radiodiagnostic room(s)
- (iii) Dark room (or processing room)
- (iv) X-ray viewing area
- (v) Sub-waiting area
- (vi) Storage

(*b*) *Pathology laboratory*

(*c*) *Cleaners' room for preparation, recovery and short-stay unit*

(*d*) *Sister's office for orthopaedic and fracture clinic*

(*e*) *Treatment room for orthopaedic and fracture clinic*

(*f*) *Fitting room for surgical appliances*

(*g*) *Clean and dirty utility rooms*

(*h*) *Research room*

Circulation space

For the purpose of the provisional cost limit the area occupied by internal circulation space and internal walls and partitions represents, on average, the following percentage additions to the net floor area of the basic and additional accommodation in each of the undermentioned groups:

Departmental accommodation	— 50 per cent
Minor operating theatre and plaster room	— 45 per cent
Preparation, recovery and short-stay unit	— 50 per cent
Orthopaedic and fracture clinic	— 50 per cent
Teaching hospital increment	— 50 per cent

DEPARTMENTAL COST ALLOWANCES

1. Basic accommodation

The functional units for the various groups of accommodation are:

(*a*) Departmental accommodation—Total number of patients in 3-hour peak period

(*b*) Minor operating theatre and plaster room—Total number of patients in 3-hour peak period

(*c*) Preparation, recovery and short-stay ward—The bed

(*d*) Orthopaedic and fracture clinics—The doctor session

The cost formula is expressed in terms of a unit of £110, as follows:

(*a*) *Departmental accommodation*

For the first 60 patients in a 3-hour peak period	—Allow 372 units
For each additional 5 patients in 3-hour peak period	—Allow 5 units

(*b*) *Minor operating theatre and plaster room*

For the first 60 patients in a 3-hour peak period	—Allow 388 units
For each additional 5 patients in a 3-hour peak period	—Allow 1 unit

(*c*) *Preparation, recovery and short-stay unit*

For the first 8 beds	—Allow 150 units
For each additional bed	—Allow 9 units

(*d*) *Orthopaedic and fracture clinic*

For the first 18 doctor sessions	—Allow 151 units
For each additional doctor session	—Allow 5½ units

(*e*) *Teaching hospital increment* —Allow 62 units

2. Additional accommodation

List of additional accommodation—Allow £5 10s. 0d. per square foot except for the following:

(*a*) X-ray unit accommodation (i–vi)—Allow £6 2s. 0d. per square foot

(*b*) Pathology laboratory—Allow £9 11s. 0d. per square foot

Note: Engineering

(i) *Departmental accommodation*

The following engineering services are included in item 1 (*a*) above and account for approximately 24–26 per cent of the total cost:

Space heating throughout

Mechanical ventilation of treatment rooms

Extract ventilation

Hot, cold and drinking water services

Town gas, oxygen and medical suction

Water connections for fire service

Lighting, power, emergency lighting, telephones, clocks, staff call and fire alarm systems, call points, wiring for drug cupboards, fixed x-ray viewing screens, and mechanical services

Small tea boiler, bed-pan washer and disinfector

Pressure steam bowl and instrument steriliser (if required)

Electrically heated plate in clean utility room

Fixed x-ray viewing screens

(ii) *Minor operating theatre suite and plaster room*

The following engineering services are included in item 1 (*b*) above and account for approximately 51–53 per cent of the total cost:

Space heating, mechanical ventilation and humidity control

Extract ventilation

Hot, cold and drinking water services

Steam and condensate

Piped oxygen and medical suction

Water connections for fire service

Lighting, power, emergency lighting, telephones and clocks

Wiring for operating theatre lamp, x-ray outlets, fixed x-ray viewing screens, low-voltage points and mechanical services

Two pressure steam bowl and instrument sterilisers

Four fixed x-ray viewing screens

(iii) *Preparation, recovery and short-stay unit*

The following engineering services are included in item 1 (*c*) above and account for approximately 30–32 per cent of the total cost:

Space heating, extract ventilation

Hot, cold and drinking water services

Piped oxygen and medical suction

Town gas

Water connections for fire service

Lighting, power, emergency lighting, telephones, clocks, staff call and fire alarm systems, call points and bed-head units

Wiring for mechanical services

One grill and boiling ring, small water boiler, bed-pan washer and disinfector

(iv) *Orthopaedic and fracture clinic*

The following engineering services are included in item 1 (*d*) above and account for approximately 19–21 per cent of the total cost:

Space heating, extract ventilation

Hot, cold and drinking water services

Town gas

Piped medical gas

Lighting, power, emergency lighting, telephones, clocks, staff call and fire alarm systems, call points. Wiring to fixed x-ray viewing screens and mechanical services

Fixed x-ray viewing screens

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I. Scope

1. This Building Note gives guidance on the design of an accident and emergency department in a district general or teaching hospital. It takes account of the Report of the Sub-Committee on Accident and Emergency Services of the Standing Medical Advisory Committee of the Central Health Services Council and views expressed by representatives of the Accident Services Review Committee of Great Britain and Ireland, a professional body jointly established by seventeen sponsoring organisations. It is also partly founded on detailed studies undertaken by the Scottish Home and Health Department of a number of casualty departments in Scotland and England.

2. For the purpose of this Note the accident and emergency department can be defined as the department concerned with the reception and out-patient treatment, including follow-up treatment, of accident victims and patients attacked by sudden illness who require hospital care. It also deals with the immediate resuscitative requirements of dire emergencies prior to their admission to the wards.

3. The wards, together with the major operating theatres, will normally be provided apart from, though readily accessible to, this department: however, this pattern will not necessarily be adopted at all accident centres.

II. General considerations

4. As a result of experience gained in the medical, nursing and architectural professions since this Building Note was published (February 1964) it is now important that operational policies of the operating department, the out-patient department and the accident/emergency department should be co-ordinated in order to avoid unnecessary overlapping of the work of these departments, which otherwise can result in more staff being required and duplication in the provision of some accommodation. These three departments should no longer be considered as separate entities.

5. The main areas of overlap relate to the accommodation detailed below, which are currently recommended as necessary provision for each separate department:

(1) operating theatres, whether major or minor, and the necessary ancillary rooms and staff changing accommodation;

(2) short-stay beds and recovery beds.

The requirements of these three departments in staffing and accommodation should be carefully co-ordinated.

6. No adjustment has been made in the schedules of accommodation, the engineering content or the costing of the following Hospital Building Notes:

No. 22, Accident and Emergency Department

No. 26, Operating Department

No. 12, Out-Patient Department

Further advice is contained in the Scottish Home and Health Department's "Hospital Planning Note No. 6: Organisation and Design of Out-Patient Departments".

7. Boards should consider which facilities in these departments could be shared satisfactorily and where it is possible to reduce the total provision of accommodation, the cost limits must be reasonably interpolated between the departments concerned.

8. An accident and emergency department should be part of a hospital which also provides supporting in-patient beds. It should be staffed by orthopaedic and general surgeons and other specialists on the staff of the hospital. The department is primarily concerned with patients who are the victims of accidents, including head injuries and burns, locomotor injuries, thoracic, abdominal and vascular injuries, sudden illness and poisoning. Patients will be examined in the department and those who do not require to be admitted to the wards will in general be treated within the department. (Ophthalmic casualties may, however, best be treated in a hospital ophthalmic department.) Some patients will be admitted to the preparation, recovery and short-stay beds for a few hours' observation. Patients requiring admission as in-patients will generally be transferred to the wards as soon as possible though it may first be necessary for emergency investigation and treatment (including x-ray and resuscitation). Patients suffering from certain types of serious injury may be referred to special regional centres (e.g. neuro-surgical, burns and maxillo-facial units).

9. No firm pattern has emerged as to the best way in which to organise the various parts of an accident and emergency department and the recommendations in this Note may require modification to take account of variations. For example, the operating theatre facilities can be provided on one of two scales of accommodation:

(1) The provision of theatres for minor surgical work only, for patients who will be able to return home after a short period of observation in the recovery unit. In this case all major casualties would be examined in the accident and emergency department and then moved to the main hospital theatres for any operation. The number of main theatres required will depend on the total work load of the hospital including the accident and emergency department.

(2) The provision of major operating theatres in the accident and emergency department. In this case all major casualties, as well as minor ones, would be operated on in these theatres. They could also be used for emergency operations during the night, thus obviating the need to staff any of the main hospital theatres at night.

10. The staffing arrangements of the hospital and the organisation of the accident and emergency department will largely determine which of these alternatives is preferred. It will generally be uneconomic to provide full staffing (especially at night) for major theatres in an accident and emergency department if the main hospital theatres are to be staffed throughout the twenty-four hours.

11. For the purposes of this Note the scale of accommodation recommended is that in paragraph 9 (1) above: if it were considered that the alternative in paragraph 9 (2) were more suitable in a particular case, a special case should be made out for theatre accommodation on a larger scale.

12. Associated with the department, though not necessarily under the same control, should be facilities for the reception of emergency admissions.* When these are arranged by general practitioners the patients may go direct to the wards; but they will come to the accident and emergency department first if they need services which are available immediately only in that department.

13. Many accident and emergency departments also deal at present with large numbers of casual attenders suffering from minor illnesses or injuries, though care of these should come increasingly within the province of the work of the general practitioner.

14. General hospitals which are not accident and emergency centres will find it necessary to have some accommodation for the reception of emergency admission, and may need to make provision for the treatment of patients who cannot reasonably be expected to attend a major accident centre or who are referred to them after initial treatment at the accident and emergency department. This accommodation is not dealt with in this Building Note.

15. An accident and emergency department will normally serve a population of not less than 150,000 though in densely populated areas it will frequently be preferable for accident units to be based on much larger populations. This will justify a 24-hour service and a higher level of staffing than is usual at present in small departments. It will also ensure that accident and emergency departments are sited in hospitals with supporting services sufficient to enable them to deal with all categories of seriously injured and ill patients. A guide for estimating the total number of patients likely to be dealt with in a 3-hour peak period is given in Appendix I. Appendix II gives the recommended scale of accommodation and areas for three sizes of department, arrived at by means of this calculation. The scale, however, has largely been based on existing loads and when used as a basis for planning new departments such factors as the diminishing responsibility for casual attenders (see paragraph 13) must be taken into account. On the other hand it may be necessary to provide a higher scale of specialised accommodation—e.g. plaster rooms—than would be suggested by a simple reference to the existing number of new patients. Guidance is also given in Appendix I on the effect of peak loads on the numbers of staff required.

16. It will be necessary to provide a few beds within the accident and emergency department in which patients may remain under observation for periods up to 24 or at the most 48 hours. These preparation, recovery and short-stay beds can be used for patients prior to treatment or operation, for patients requiring a period of recovery following treatment in the department's operating theatres, and for patients whose condition is such that they require a period of observation. The number of beds required in this unit will depend considerably on local circumstances, including the length of time the patients are allowed to remain here before being removed elsewhere. For the purposes of this Building Note these are considered as short-term emergency beds only and a possible scale of provision is shown in Appendix II, Table 3. If further beds were needed they should be treated as additional accommodation.

17. Accident and emergency departments should have ready links with and access to the services of neurosurgery, plastic and thoracic surgery and other special regional centres. In each area services should be coordinated in accordance with an area plan and each hospital taking part should be fully aware of the functions being discharged by other hospitals and other relevant medical services—e.g. industrial health services.

18. Where a hospital has an accident and emergency department, the follow-up fracture clinic should be planned with it unless it is already included in the outpatient department. Accommodation for this clinic, when required, should be calculated on the " doctor session " basis (see Appendix II, Table 4). The theatres of the accident and emergency department can be used by this clinic, and also the departmental plaster room so long as further space is provided for the necessary number of tables. The fracture clinic accommodation can also be used for routine consultative orthopaedic clinics held at times when the fracture clinic is not in session. In such circumstances the amount of accommodation required for both clinics can be calculated jointly on the " doctor session " basis. Treatment rooms and plaster rooms can be shared.

19. A department planned to provide full segregation for all categories of patients is extremely complicated and awkward to work, particularly at busy periods, as well as being extravagant in space and staff. Accommodation rigidly limited in its use by reference to sex, age, injury, etc., is apt to be unused for long periods and heavily congested at others. The accommodation should therefore be made fully suitable for a range of uses. This will have the further advantage that the patient will not have to wait so often for a special-purpose room to become free.

20. It is, however, generally accepted that seriously injured patients should be separated from those with minor injuries and those returning for follow-up treatment. There should be a separate entrance for patients in the first category, the majority of whom will arrive

* Booked admissions are dealt with in Hospital Building Note No. 18 on Administrative Departments.

by ambulance, which will enable them to be taken direct to a resuscitation or examination room or cubicle without passing through waiting spaces.

21. All other patients attending the department may enter through the same entrance, whether they are ambulant casualties who are attending for the first time or patients who are on return visits to attend dressings clinics or follow-up fracture clinics. Having only one entrance for these groups of patients has the advantage of easier staff control of the entrance, and the need to provide only one reception office and one set of ancillary rooms (porters' stations, wheelchair store, etc.) which are required at entrances. To avoid mixing patients who require immediate attention with those attending for follow-up treatment, the main waiting area can be planned with separate spaces for these two groups of patients after they have passed the reception office. The orthopaedic patients should preferably enter via the out-patient department for reception and record purposes, wherever this department is planned adjacent to the accident and emergency department.

22. The two principal entrances could, depending on the overall concept for the hospital, be grouped with the main entrance to the hospital.

23. It is desirable that children should be shielded as much as possible from witnessing other casualties; part of the main waiting space should therefore be capable of being divided off for children if necessary. As the examination and treatment areas should all be designed

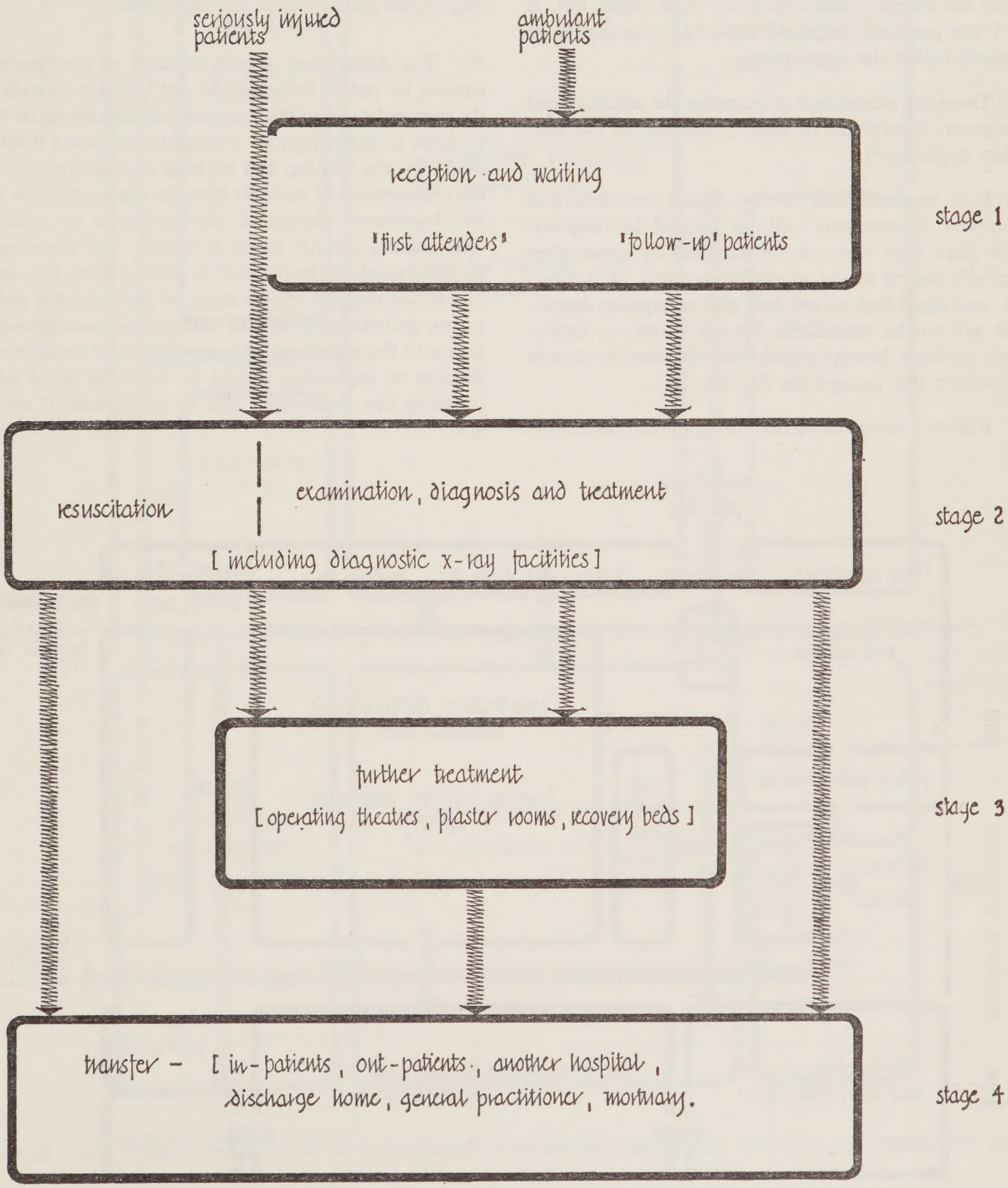

FIGURE 1. Flow diagram of patients through an accident and emergency department.

for some degree of privacy it should be possible for the children to be examined and treated without providing any special accommodation exclusively for their use. In planning the recovery ward, the use by child patients should be considered when dividing the bed areas into rooms, bays or cubicles.

24. The accommodation recommended allows for segregation of patients with clean wounds from those with septic conditions.

25. Many new patients will require a radiological examination after examination by a doctor, as will many of the patients attending the orthopaedic and follow-up fracture clinics. It will be necessary to have adequate 24-hour facilities for taking x-rays and processing films. Ideally the main x-ray department should immediately adjoin the accident and emergency department but, if this is not possible, diagnostic x-ray facilities should be provided within the department.

26. There are advantages in planning the accident and emergency department in close proximity to the out-patient department.

27. It is assumed that, in the future, accident and emergency departments will be located in hospitals which have their own, or are supplied by some other hospital's central sterile supply department. It is therefore envisaged that an accident and emergency department will not be responsible for sterilising any instruments, syringes, bowls or packs, except possibly theatre instruments (see paragraphs 72, 200, 201).

28. Figure 1 represents a flow diagram for patients at an accident and emergency department. The diagram shows the four stages through which the patient may pass:

(1) Reception and waiting.

(2) Examination, diagnosis and treatment, including immediate resuscitation.

(3) Further treatment.

(4) Transfer—which may mean admission as an in-patient, referral to out-patient department, transfer to another hospital, or discharge home. Bodies may have to be taken to the mortuary.

29. Figures 2 (*a*), (*b*) and (*c*) show in more detail the basic accommodation needed for the first three routes in Figure 1. They give three variations on the relationship of the rooms within the department.

30. The department should be sited so that patients coming by public transport do not have far to walk on the hospital site and those coming by car should be able to drive to the entrance. Adequate provision must be made for the turning and parking of ambulances, and the transference of patients between the ambulance and the department should be carried out in an enclosed area leading directly to the entrance. The department should preferably be planned at ground level, but where this is not possible ramps must be provided for pedestrians, private vehicles and ambulances to ensure easy access to the entrances. The possibility of future modification or expansion should be borne in mind when planning the department and in positioning it on the site.

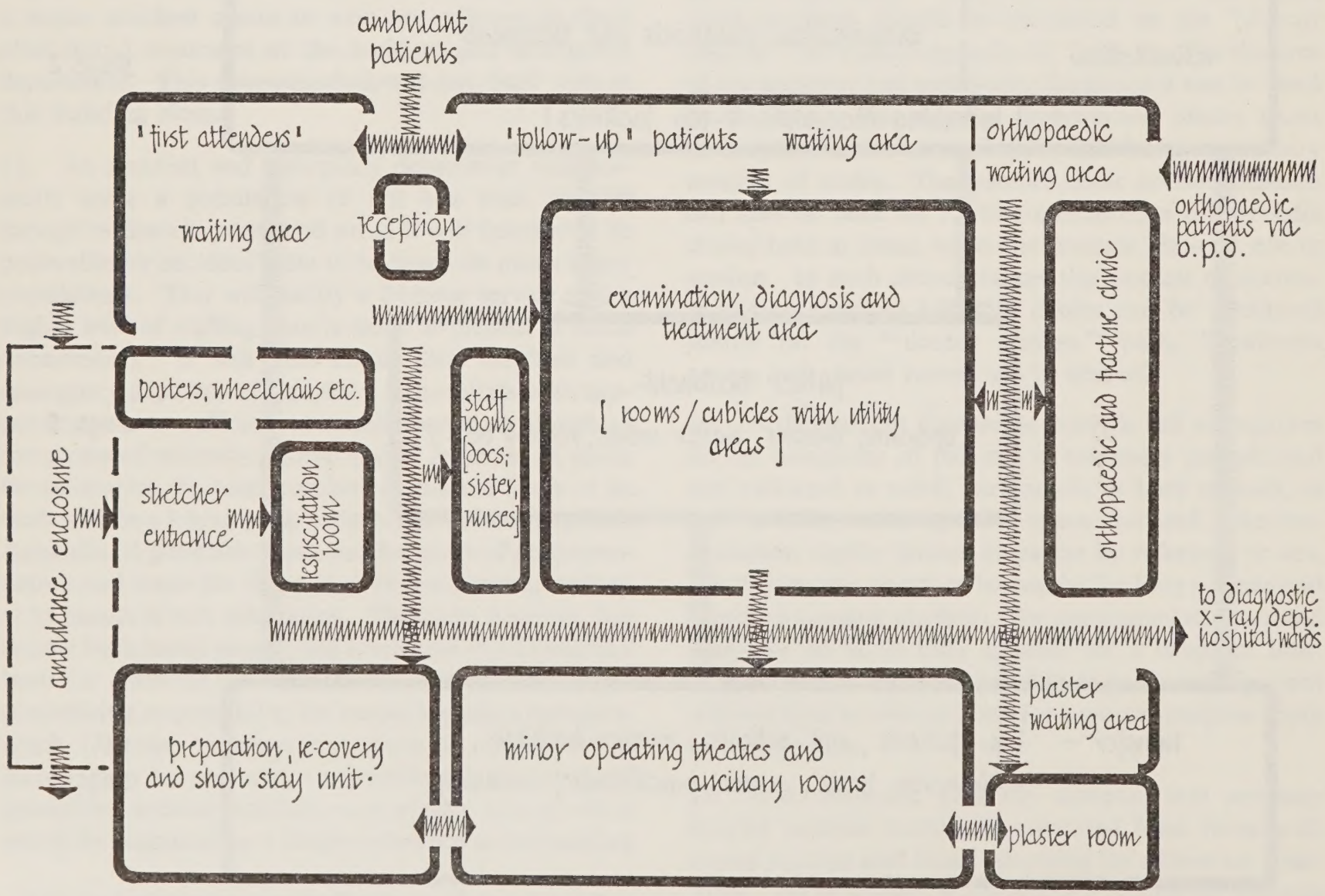

FIGURE 2 (*a*). Diagrammatic layout of a department showing the relationship of rooms.

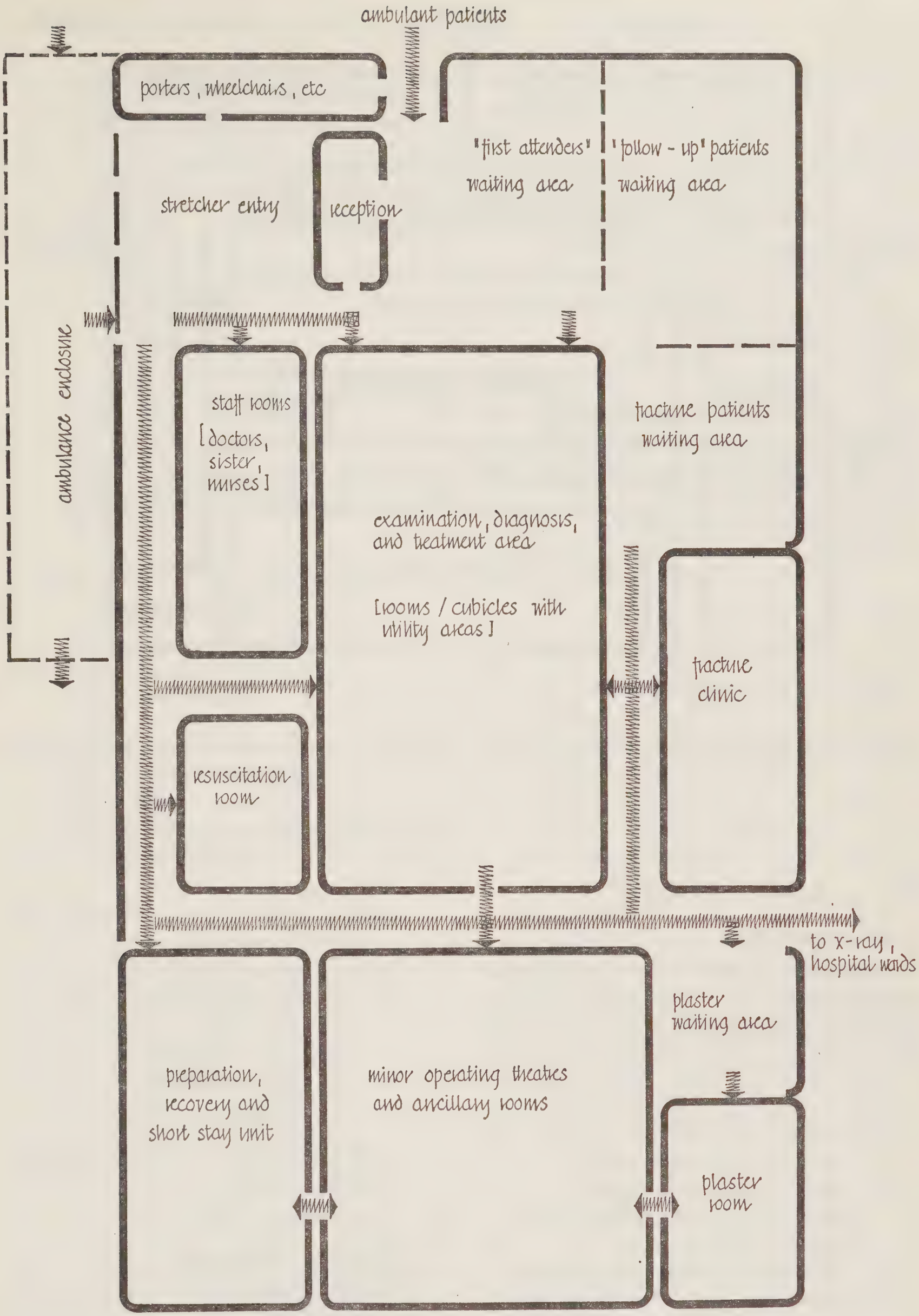

FIGURE 2 (*b*). Diagrammatic layout of a department showing the relationship of rooms (no orthopaedic clinic).

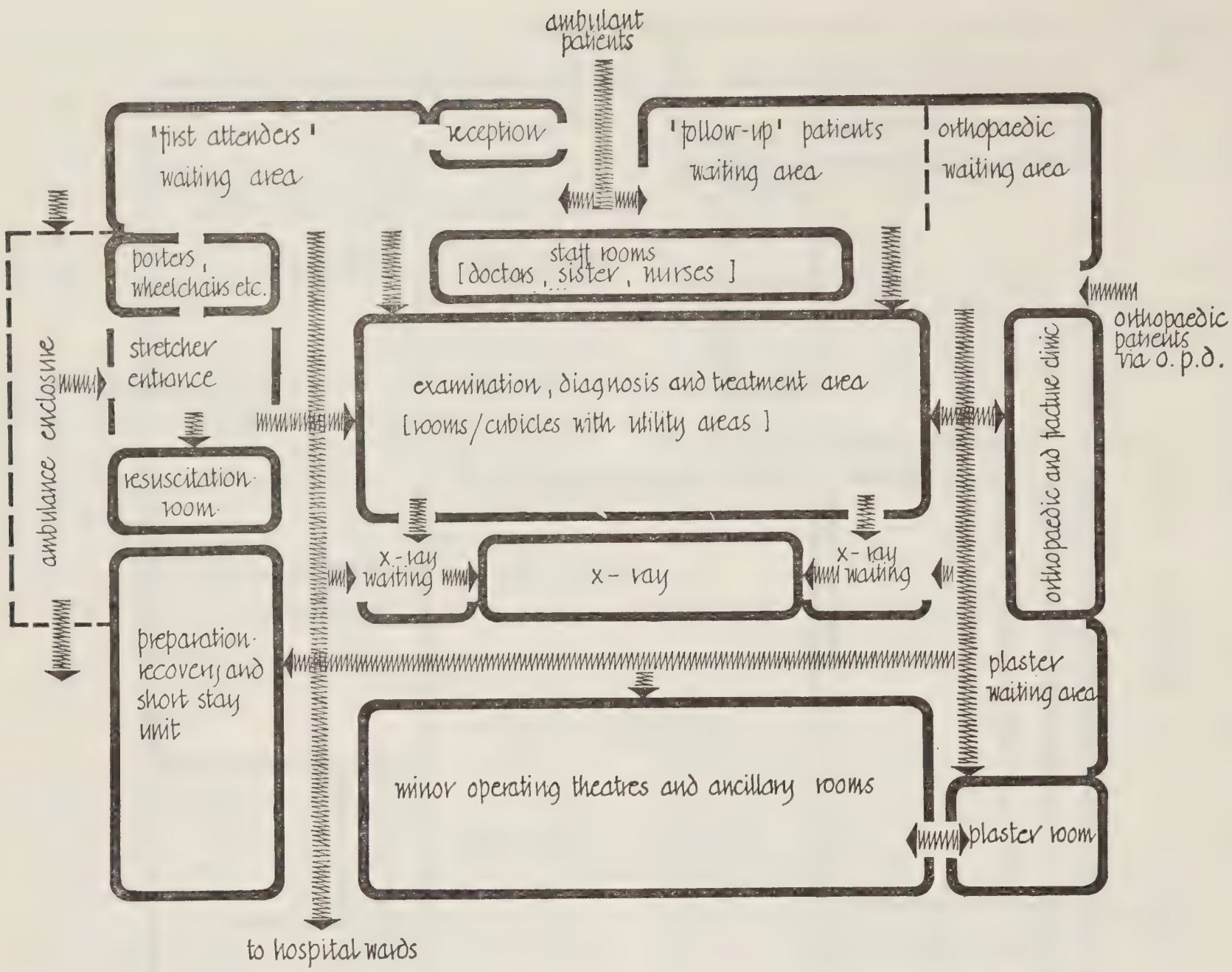

FIGURE 2 (*c*). Diagrammatic layout of a department showing the relationship of rooms (x-ray facilities included).

III. List of rooms

A. Basic accommodation

31. This has been divided into four groups and should be provided in all cases, with the possible exception of group (*d*)—orthopaedic and fracture clinic—which might be planned as part of the out-patient department.

(*a*) *Departmental accommodation*

- (i) Entrance for stretcher patients
- (ii) Entrance for ambulant patients
- (iii) Reception office and discharge office
- (iv) Porters' room or station
- (v) Trolley and wheelchair store or area
- (vi) Waiting areas
  - (*a*) Main waiting
  - (*b*) Sub-waiting
- (vii) Patients' lavatories
- (viii) Interview room
- (ix) Staff accommodation
  - (*a*) Staff lavatories
  - (*b*) Duty doctors' room
  - (*c*) Sister's room
  - (*d*) Nurses' duty room
  - (*e*) Consultants' office
- (x) Resuscitation room
- (xi) Examination and treatment rooms/cubicles
- (xii) Clean utility room
- (xiii) Dirty utility room
- (xiv) Sluice and test room
- (xv) Cleansing room
- (xvi) Storage
- (xvii) Cleaners' room
- (xviii) Circulation space necessary for the above accommodation

(*b*) *Minor operating theatre suite and plaster room*

(i) Operating theatres
(ii) Anaesthetic room
(iii) Scrub-up and gowning area
(iv) Sink or disposal room
(v) Sterile supply room
(vi) Changing rooms for theatre staff
(vii) Storage
(viii) Plaster room
(ix) Plaster room stores, etc.
(*a*) Splint store
(*b*) Plaster store
(*c*) Plaster mould store
(*d*) Plaster disposal lobby
(x) Sub-waiting space for plaster room and theatres
(xi) Cleaners' room
(xii) Plant room
(xiii) Circulation space necessary for the above accommodation

(*c*) *Preparation, recovery and short-stay unit*

(i) Bed areas
(ii) Changing cubicles
(iii) Sluice and disposal room
(iv) Clean utility area
(v) Nurses' station
(vi) Pantry
(vii) Patients' lavatories and bathroom
(viii) Storage
(ix) Circulation space necessary for the above accommodation

(*d*) *Orthopaedic and fracture clinic* (if required)

(i) Consulting rooms
(ii) Examination and treatment cubicles
(iii) Plaster room
(iv) Plaster room stores, etc.
(*a*) Splint store
(*b*) Plaster store
(*c*) Plaster mould store
(*d*) Plaster disposal lobby
(v) Sub-waiting space
(vi) Storage
(vii) Circulation space necessary for the above accommodation

(*e*) *Teaching hospital increment*

(i) Teaching room
(ii) Examination and treatment rooms/cubicles
(iii) Students' room
(iv) Circulation space

Functional unit

32. The functional unit selected for groups (*a*) and (*b*) of the basic accommodation in this Note and the related Cost Note (Appendix E to Hospital Building Note No. 2) is related to the total number of patients which can be dealt with in a 3-hour peak period, calculated in the manner described in Appendix I; for group (*c*) it is the bed, for group (*d*) the " doctor session ", and for group (*e*) it is the teaching increment.

B. Additional accommodation

33. Additional accommodation which may be required in some instances might include:

(*a*) *Diagnostic x-ray unit*
(i) Patients' undressing cubicles
(ii) Radiodiagnostic room(s)
(iii) Dark room (or processing room)
(iv) X-ray viewing area
(v) Sub-waiting area
(vi) Storage

(*b*) *Pathology laboratory*
(*c*) *Cleaners' room for preparation, recovery and short-stay unit*
(*d*) *Sister's office for orthopaedic and fracture clinic*
(*e*) *Treatment room for orthopaedic and fracture clinic*
(*f*) *Fitting room for surgical appliances*
(*g*) *Clean and dirty utility rooms*
(*h*) *Research room*

IV. Description of rooms

34. Appendix II gives the recommended scale of provision for the basic accommodation in an accident and emergency department. The orthopaedic and fracture clinics are included though they may not be required in all cases. The method of calculation is explained in the preface to the appendix.

A. Basic accommodation

(a) Departmental accommodation

(i) *Entrance for stretcher patients*

35. Ambulances should be able to drive into an

enclosed ambulance bay so that patients can be transferred directly into the department under cover. It is generally more convenient to provide a drive-through ambulance bay rather than one which necessitates the ambulance being backed. The entrance to the bay should be not less than 10 ft. 6 in. in height. It should be possible to transfer patients from at least two ambulances at the same time. The detailing of the ambulance bay and the entrance lobby will be influenced by the choice of doors (double swing, folding-sliding, or overhead). The entrance lobby should have easy access to the resuscitation room.

(ii) *Entrance for ambulant patients*

36. This should have a lobby at least 8 ft. wide and should lead directly to the reception office.

(iii) *Reception office and discharge office*

37. This office should be in a prominent position near the entrance for walking patients as the reception clerks will be responsible for taking information from them as they enter the department. Particulars of the seriously ill patients will be taken by the nurses or reception clerks in the treatment cubicles, or in some cases the relative or escort of the patient will give the necessary information to the clerks in the reception office. It is not therefore essential to plan the reception office adjacent to the stretcher entrance, though it should be in a readily accessible position. The clerks will register patients, make appointments for return visits, and arrange transport facilities. Each clerk will require at least 4 ft. length of counter with adequate drawer and shelf space for appointment books and current records. Non-current records should be stored centrally in the hospital administrative department (see Hospital Building Note No. 18).

(iv) *Porters' room or station*

38. This should be near the entrances for both stretcher and ambulant patients. The room will probably be used by members of the ambulance crew.

(v) *Trolley and wheelchair store or area*

39. Trolleys (for patients on stretchers) and wheelchairs should be readily available near both entrances for those requiring them on arrival.

(vi) *Waiting areas*

(*a*) *Main waiting*

40. The main waiting area should be easily accessible from the entrances. It could be divided into two spaces to cater for the " first " attenders and the " follow-up " patients. Further sub-division of the main waiting area depends on the organisation of the department, bearing in mind that there will be children, patients' escorts, and patients awaiting return transport by ambulance (some in wheelchairs or on stretchers). A tea bar or vending machine may be required. One or more public telephone booths should be provided.

(*b*) *Sub-waiting*

41. Sub-waiting areas, which may be readily supervised by the nursing staff, will be required for those patients who are under treatment and have to wait for x-ray or laboratory reports, or for the plaster room or theatre.

(vii) *Patients' lavatories*

42. Lavatories for both sexes should be provided near the main waiting space. Each should have one w.c. large enough for those patients needing assistance.

(viii) *Interview room*

43. One interview room is required for interviewing patients' escorts or the police: this can also be used as a waiting room for relatives in distress.

(ix) *Staff accommodation*

(*a*) *Staff lavatories*

44. The sanitary facilities for doctors and nurses can generally be sited adjacent to the theatre staff changing rooms (see paragraphs 73–75) but it may be convenient to provide some staff lavatories elsewhere. Small lockers for personal possessions should be planned with these lavatories.

45. The amount of lavatory accommodation recommended is as follows:

Males: 1 w.c., 1 urinal and 1 wash basin for every 15 persons.

Females: 1 w.c. and 1 wash basin for every 12 persons.

(*b*) *Duty doctors' room*

46. A room is required to which the doctors on duty in the department can go during quiet periods when their services are not required. A minimum area of 120 sq. ft. is recommended to allow sufficient space for a table, a wardrobe or hanging cupboard, chairs, a bed, couch or settee of at least 6 ft. 6 in. × 2 ft. 6 in. This room should preferably be planned near the staff changing rooms for the theatres where showers and w.c.s will be available.

(*c*) *Sister's room*

47. An office is required for the sister-in-charge of the department. This room should be placed in a central position to aid supervision. There should be a small safe for patients' valuables.

(*d*) *Nurses' duty room*

48. This is where the nurses on duty can wait during quiet periods. It should be centrally placed with a door or glazed panel giving a view of the entrances to the department. The room should be equipped with a table and chairs.

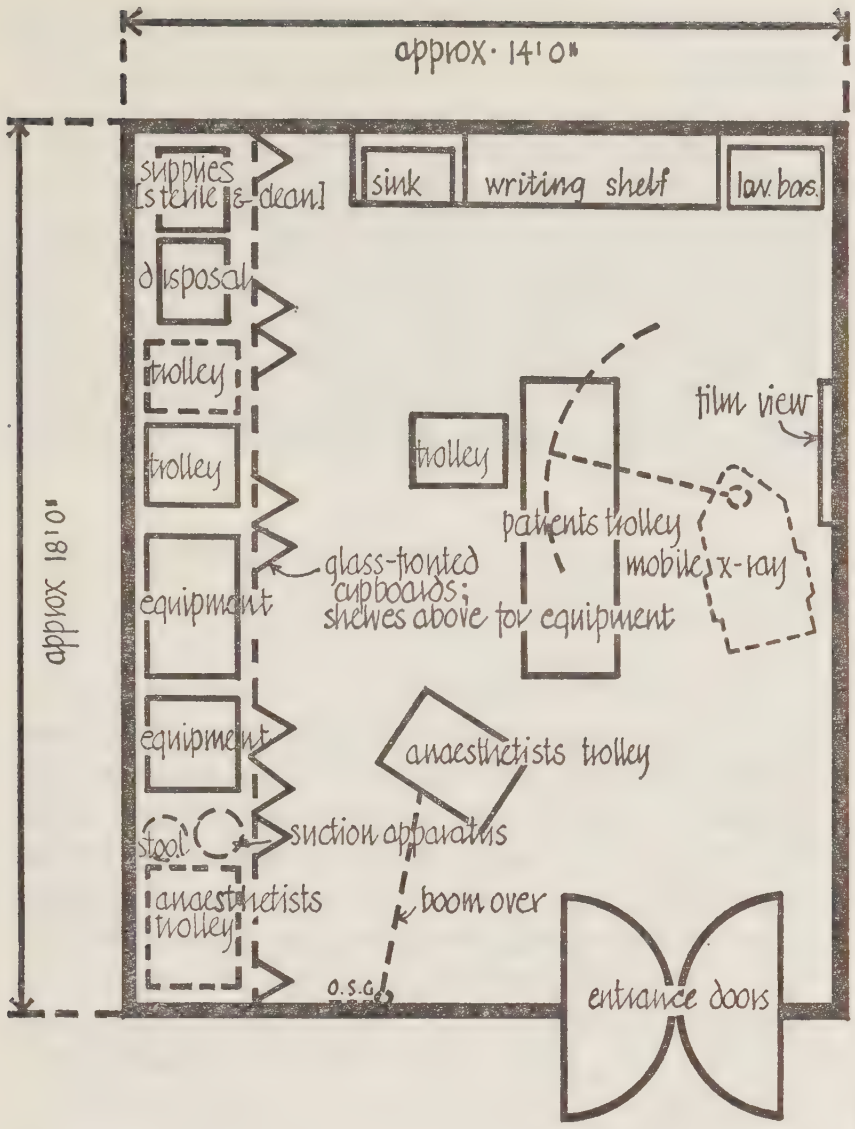

FIGURE 3. Typical layout of a resuscitation room showing the equipment required.

(*e*) *Consultants' office*

49. It will be necessary to provide an office for the consultants which should be capable of use as a small tutorial room—e.g. for post-graduate teaching, general practitioner refresher courses, etc. The room should be suitably furnished and should have at least two x-ray viewing screens and adequate storage facilities.

(x) *Resuscitation room*

50. This is for the examination and emergency treatment of patients requiring immediate resuscitation. There should be easy access from the entrance for stretcher patients and an easy route to the accident wards in the main hospital.

51. One fully equipped resuscitation room of about 250 sq. ft. should be sufficient for most departments. If an unusually large number of patients requiring resuscitation were to arrive together some of the treatment cubicles could be opened to form one large space, and other accommodation, such as theatres or the recovery unit, could be taken over for the purpose.

52. The resuscitation room should be equipped with a sink, a lavatory basin with elbow-operated taps, a writing shelf, an x-ray viewing screen and a patients' trolley. It should also have shelves and cupboards (preferably glass fronted) for storing trolleys for sterile and used supplies, stools, and other equipment, etc. The room should be equipped for anaesthesia, piped oxygen and suction. Provision should be made for the poison identification and antidote cabinet.

53. If it is not possible to plan either of the sluice rooms (described in paragraphs 61 and 91) near the resuscitation room, a "dirty" lobby or bay will be necessary, adjoining the resuscitation room and fitted with a slop sink and drainer.

54. Figure 3 shows a typical layout for a resuscitation room.

(xi) *Examination and treatment rooms/cubicles*

55. Multi-purpose rooms or cubicles are required for use in examination, consultation, diagnosis and treatment. Separate rooms or cubicles with solid partitions offer more privacy but cubicles with curtains have the advantage that they can be opened into a single working space in the event of a major accident. The general preference is to have some of each type, with at least one "sound-deadened" room for accommodating noisy patients and children.

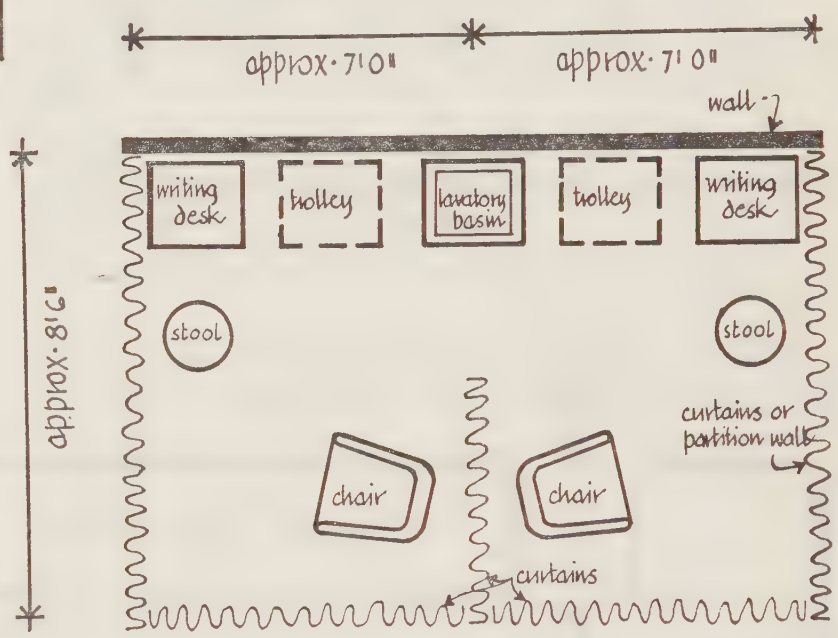

FIGURE 4 (*a*). Typical layout of examination and treatment cubicles showing the equipment required. In this example two cubicles share a lavatory basin.

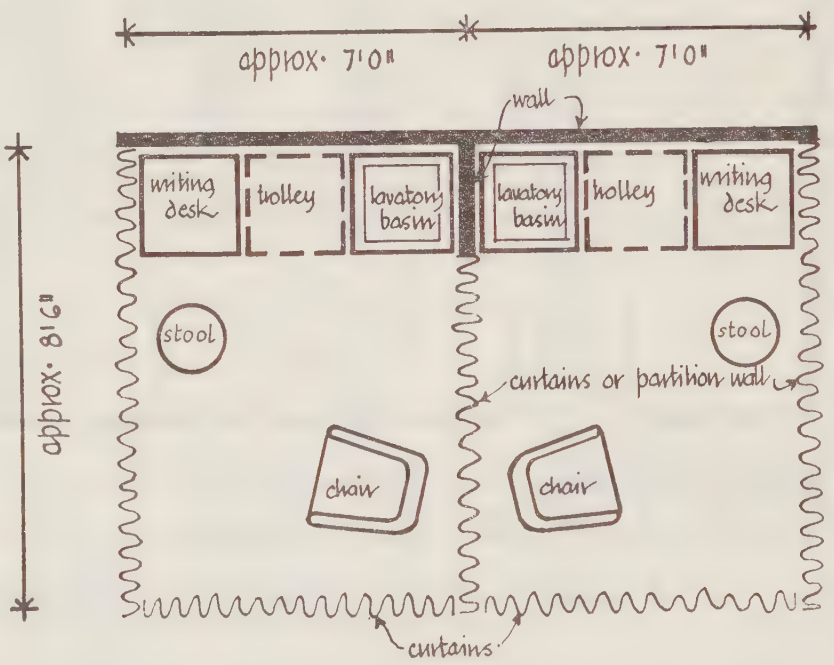

FIGURE 4 (*b*). Typical layout of examination and treatment cubicles showing the equipment required. In this example each cubicle has a lavatory basin.

56. Of the total number of rooms/cubicles, half should consist of cubicles, each of about 60 sq. ft. These will be used primarily for daily dressings and treatment of minor injuries to ambulant patients. Each cubicle should be equipped with a writing shelf, a chair and a stool. The staff will need the use of a lavatory basin but where possible this should be shared (see Figures 4 (*a*) and (*b*)).

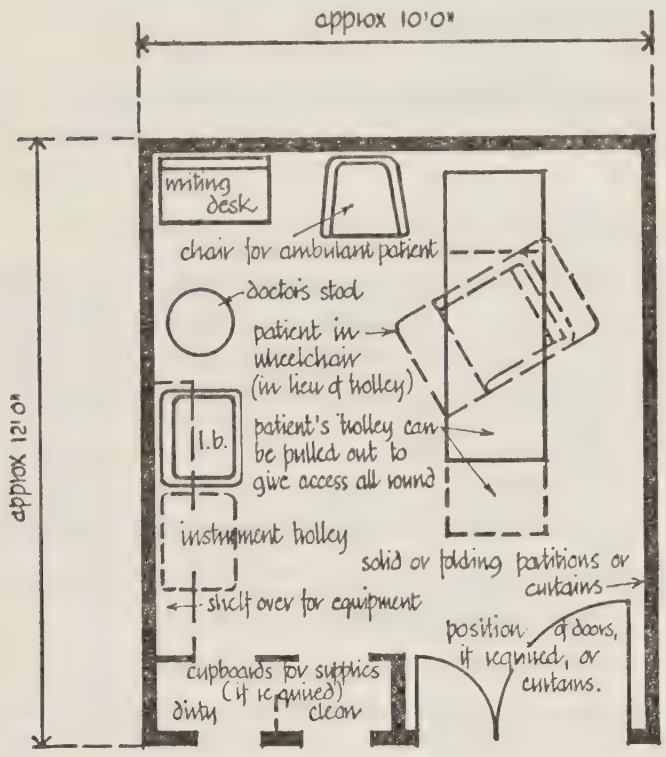

FIGURE 5. Typical layout of an examination and treatment room/cubicle showing the equipment required.

57. The other half should consist of larger rooms or cubicles for the reception of primary accident and emergency admissions. An area of 120 sq. ft. each is recommended for these. Each should be equipped with a lavatory basin with elbow-operated taps, a cupboard or trolley for sterile packs and clean supplies, another for used supplies, a writing shelf, a chair and a stool. Some of these rooms/cubicles should be equipped with a patients' trolley (see Figure 5).

58. Figure 6 shows suggested layouts of these rooms/cubicles, serviced by the utility rooms.

(xii) *Clean utility room*

59. This is required as the storage room for pharmaceutical supplies and for sterile packs and syringes supplied to the department by the central sterile supply department. The cupboards and trolleys (or wheeled cupboards) used in the examination and treatment rooms/cubicles and elsewhere are replenished from here. The room should be equipped with storage cupboards, a worktop, a small refrigerator for drugs, an electric heating plate, and a lavatory basin with elbow-operated taps. Parking space for several trolleys is needed under the worktop area or under some of the cupboards.

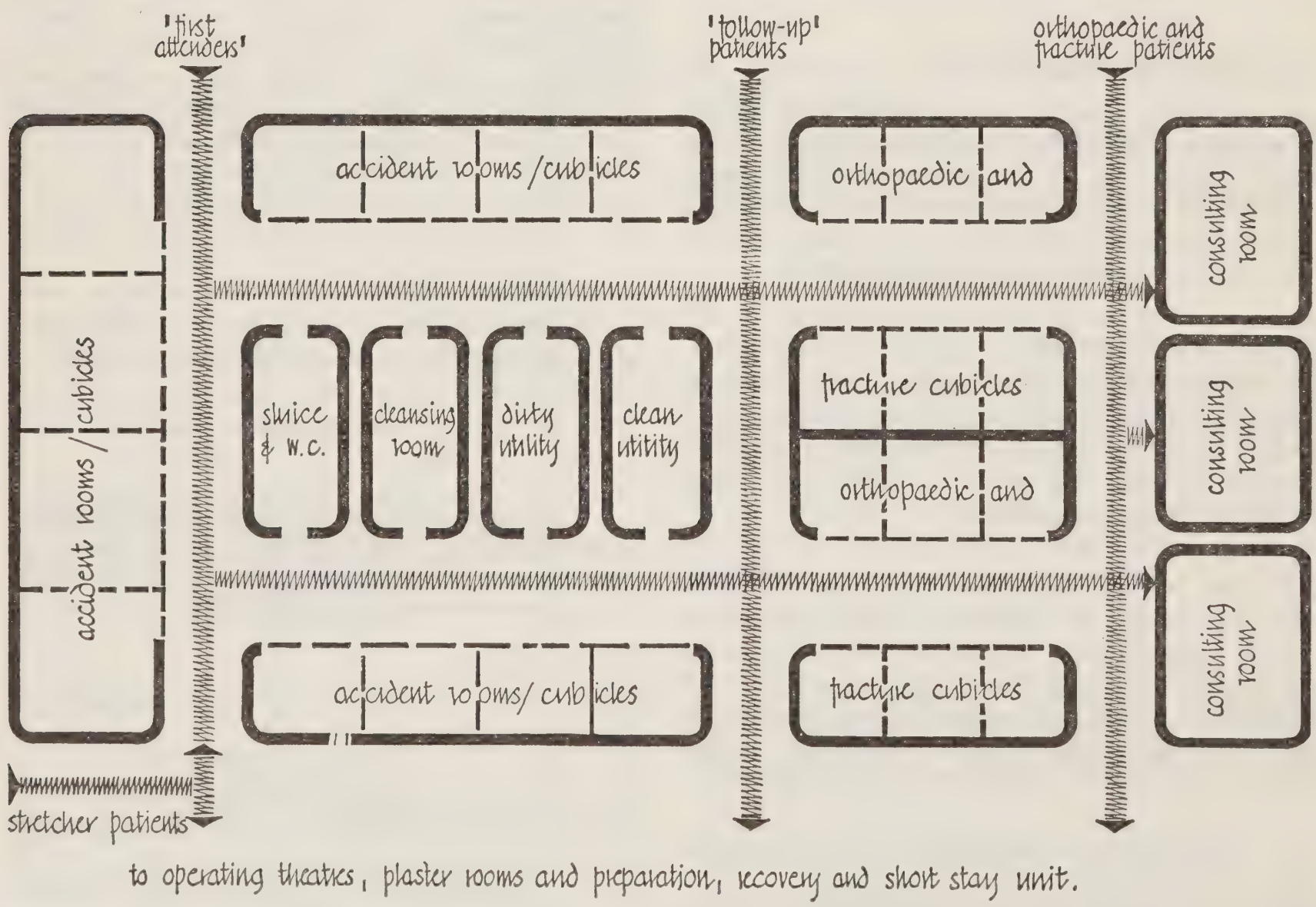

FIGURE 6. Diagrammatic layout of examination and treatment rooms/cubicles with utility area. (1) The orthopaedic and fracture clinic cubicles are planned adjacent to the accident rooms/cubicles so that the same utility areas may serve both and the clinic cubicles can be integrated with the accident rooms/cubicles if necessary. (2) The dotted lines indicate either partitions or curtains.

(xiii) *Dirty utility room*

60. This will be used for rinsing or washing instruments, bowls, etc., if this is normally done in the departments before return to the central sterile supply department, and for temporary storage of soiled dressings, gowns and bed linen pending transfer to the central sterile supply department, laundry or disposal unit. It should be equipped with a worktop, shelving, a sink with elbow-operated taps, a draining board, bags or bins for disposable articles such as syringes and gallipots (if these are used) and stands for soiled linen bags.

(xiv) *Sluice and test room*

61. The sluice for the emptying, cleaning and storing or disposal of bed-pans can be combined with a room for testing urine. The room should be equipped with cupboards and a bed-pan washing and disinfecting machine. If disposable bed-pans are used the cupboards will still be required but the disposal unit will replace the bed-pan washing and disinfecting machine. For urine testing the room will require a worktop with cupboards above and below and a laboratory sink or a sink and slab, permitting chemicals to be poured away. A lavatory containing a w.c. and basin should be adjacent to this room.

(xv) *Cleansing room*

62. Some patients brought into the accident and emergency department may have been involved in industrial or road accidents, where it is necessary to remove soiled clothing or otherwise prepare them for treatment. The cleansing room would be used for this purpose and should be equipped with a shower-bath and hand spray, a foot-bath and a deep sink. The floor should have an impervious finish laid to falls and a floor gulley.

(xvi) *Storage*

63. Provision is required in the department for the day-to-day stock of linen, and disposable items such as paper couch covers, towels, etc., and expendable items. One heated storage cupboard should be planned near the stretcher entrance lobby for blankets and pillows belonging to the ambulance service.

(xvii) *Cleaners' room*

64. A cleaners' room is required with a bucket sink with hot and cold running water, drainer and space for mechanical cleaning equipment, cleaning utensils, etc. It should be sited to serve the department, excluding the theatre suite. In some cases an additional room may be needed for the preparation, recovery and short-stay ward (see paragraph 123).

(xviii) *Circulation space*

65. The corridors should be at least 7 ft. wide in the clear.

(*b*) *Minor operating theatre suite and plaster room*

66. Two operating theatres should be provided.

67. As only minor surgery will be carried out in these theatres (see paragraph 11) it is sufficient to provide one

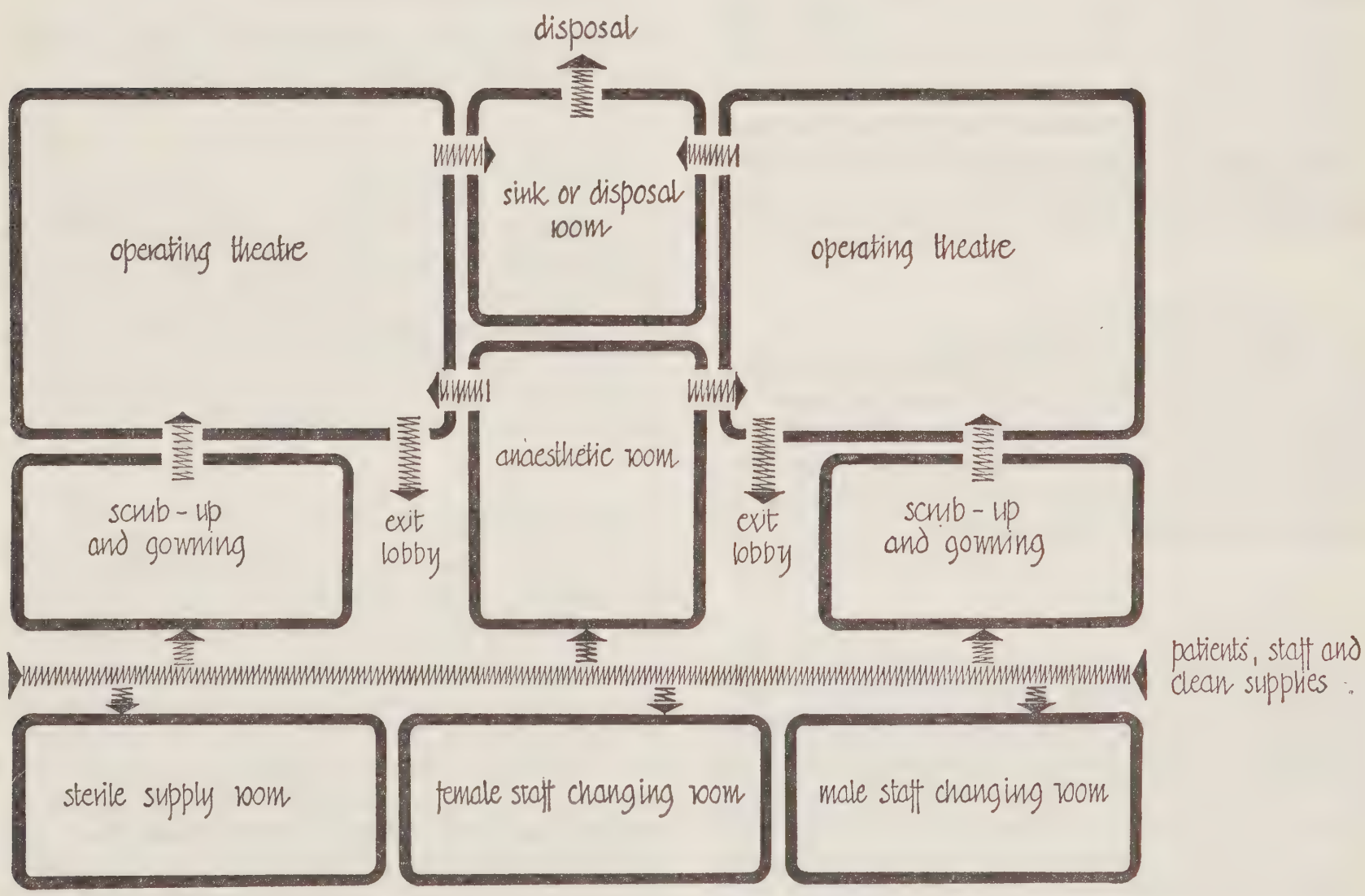

FIGURE 7 (*a*). Diagrammatic layout of two operating theatres and ancillary rooms.

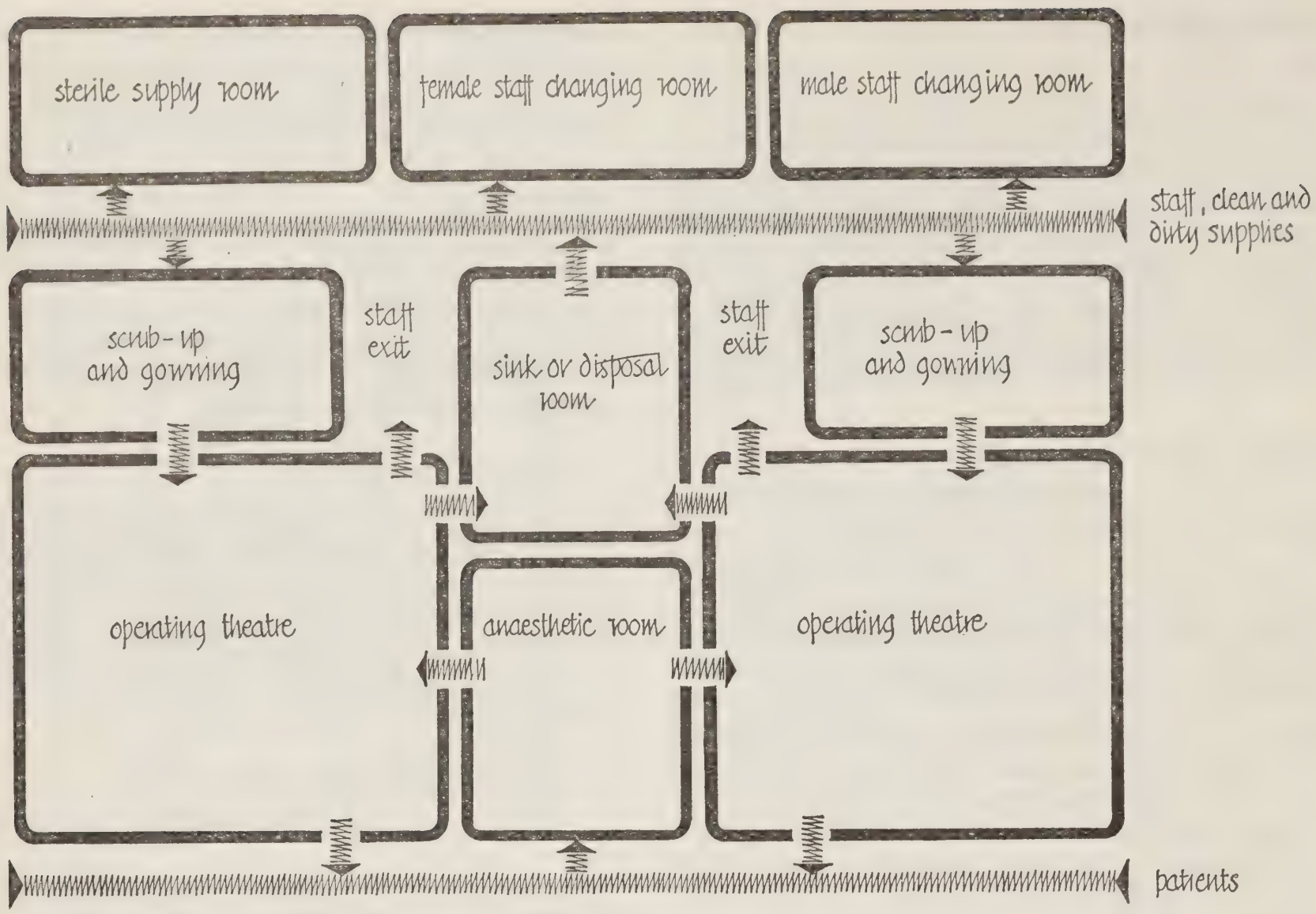

FIGURE 7 (*b*). Diagrammatic layout of two operating theatres and ancillary rooms.

sterile supply room and one sink or disposal room to serve both theatres. Many of the cases will require only a local anaesthetic which can be given in the theatre; therefore only one anaesthetic room will be required. Each theatre should, however, have its own scrub-up and gowning area. Both the theatres and the anaesthetic room should have double doors to allow easy passage for a bed.

(i) *Operating theatres*

68. Operating theatres should have an area of about 324 sq. ft. (18 ft. × 18 ft.) and a minimum ceiling height of 10 ft. to allow adequate mobility of the centre light fitting. They should be equipped with an operating table, a double x-ray viewing screen, a piped supply of anaesthetic gases and suction points.

(ii) *Anaesthetic room*

69. This room should be planned with doors leading directly to both theatres and to the corridor. The built-in equipment required is usually a sink, drainer and worktop, with high-level cupboards for materials and instruments. When the built-in equipment is arranged on both sides of the room the width should not be less than 11 ft. 6 in., but if the equipment is on one side only, 10 ft. should suffice. Piped supplies of anaesthetic gases and a suction point will be required.

(iii) *Scrub-up and gowning area*

70. The scrub-up and gowning area should be in a separate room or lobby outside the theatre.

(iv) *Sink or disposal room*

71. This should be adjacent to both theatres. It should be equipped with a sink, slop sink and drainer, and worktop. It should be possible for used articles ready for disposal to be removed from this room without passing through the theatres. Used trolleys, after being stripped and cleaned in this room, will be returned to the theatre or sterile supply room.

(v) *Sterile supply room*

72. In the accident and emergency department theatre instruments as well as dressings will generally be supplied in sterile packs from the central sterile supply department but in exceptional circumstances it may be necessary to provide a small pressure steam steriliser for immediate sterilisation of instruments (see paragraphs 200 and 201). This room should be equipped with sufficient shelving to contain the necessary supply of sterile packs for three days (to cater for week-ends and public holidays) and cupboards for storing lotions, including heated cupboard for bottled sterile water. The design should allow space for preparing and parking

the theatre trolleys. There is no need for this room to have communicating doors to the theatres, though it should be planned nearby.

(vi) *Changing rooms for theatre staff*

73. A minimum of two changing rooms, one for each sex, is required.

74. At least one w.c., lavatory basin, shower, and changing cubicle, with lockers for clothes, will be required in each changing room.

75. Rest rooms for the theatre staff will not be needed as the duty doctors' room, sister's room, and nurses' duty room are available, if required.

(vii) *Storage*

76. This is required near the theatre for the storage of traction equipment, spare table parts, extra sand bags, reserve mobile equipment, etc.

(viii) *Plaster room*

77. This will be used for the reduction of fractures and application and removal of plaster casts. The room should be equipped for anaesthesia, and mobile or fixed x-ray sets may be used there. It should be possible to wash down the plaster room floor and it should, therefore, have an impervious finish with falls to a gulley with a plaster trap. A clear height of 10 ft. is required for some apparatus used for the application of plaster jackets. About 250 sq. ft. is recommended for a room with a single table, but additional tables will usually be necessary and a minimum area of 70 sq. ft. should be allowed for each extra table. When there are several tables in one plaster room, partitions or curtains should be provided so that both sexes can be treated simultaneously. In some cases it may be desirable to partition the plaster room into two separate areas, for the applications and the removal of plasters. The plaster room, with the necessary number of tables, should also serve the orthopaedic and fracture clinics where these are sited with the accident and emergency department.

(ix) *Plaster room stores, etc.*

(*a*) *Splint store*

78. This is required in the vicinity of the plaster room for the storage of splints.

(*b*) *Plaster store*

79. A small store should open off the plaster room for the storage of plaster.

(*c*) *Plaster mould store*

80. A store or cupboard is required for the drying of plaster moulds. This process generally consists of a current of warm air being circulated through slatted shelves.

(*d*) *Plaster disposal lobby*

81. A room or lobby should be provided for disposal bins for used plasters, etc.

(x) *Sub-waiting space*

82. There should be a sub-waiting space to serve the plaster room and, possibly, the theatres.

(xi) *Cleaners' room*

83. A separate cleaners' room should be provided for the operating theatre suites. A room similar to that described in paragraph 64 is required.

(xii) *Plant room*

84. Space is required for engineering plant.

(xiii) *Circulation space*

85. The corridors should be at least 7 ft. wide in the clear.

(*c*) *Preparation, recovery and short-stay unit*

86. It is essential to provide some beds for the preparation of patients prior to treatment or operation, for patients requiring a period of recovery following treatment in the casualty operating theatres, and for patients whose condition is such that they require a period of observation. There are advantages in grouping these functions in the same unit, as this makes staffing easier and allows for sharing of ancillary rooms. Most hospitals have a rule that patients should not remain in these beds for more than 24, or at the most 48 hours, after which they should be either discharged or admitted as in-patients.

87. The preparation, recovery and short-stay unit should also include some changing cubicles for those patients who have to undress prior to treatment but do not require the use of a bed; it is essential that this facility should be closely related to the theatres and plaster room.

88. This unit will require the normal range of ancillary services usually provided for a ward unit, but the scale of these services should be in keeping with the small numbers of beds provided and some of the room areas can probably be combined (e.g. clean utility area and nurses' station). It may also be possible to site some rooms (e.g. the pantry) so that they can serve other sections of the department.

(i) *Bed areas*

89. Beds should preferably be in groups of about four with a floor area of 100 sq. ft. per bed. It is useful to have at least one single-bed room in the ward (e.g. for a noisy patient or a child, or in case of suspected infection).

(ii) *Changing cubicles*

90. A room is needed containing three to five changing

cubicles, each with a minimum area of 15 sq. ft., where patients can undress. Lockable cupboards for clothes are required within or just outside the cubicles.

(iii) *Sluice and disposal room*

91. A sluice room will be required for the emptying, cleaning and storing or disposal of bed-pans and urine bottles. The room should be equipped with cupboards and a bed-pan washing and disinfecting machine. If disposable bed-pans are used, the cupboards will still be required, but the disposal unit will replace the bed-pan washing and disinfecting machine. This room will also be used for urine tests and a sink with elbow-operated taps and a worktop with cupboards above and below should be provided. Bags and bins for the temporary disposal of soiled towels or bed linen will be required. As very few treatments will be carried out in this unit it is not necessary to provide a separate dirty utility room.

(iv) *Clean utility area*

92. Storage space is required for medicines, sterile packs, syringes, etc., and this can be planned as part of the nurses' station, if desired. It should be equipped with a sink with elbow-operated taps, a worktop and high- and low-level storage cupboards. There is no necessity to provide a refrigerator as any drugs requiring refrigeration can be kept in the clean utility room in the departmental accommodation (see paragraph 59). Space is required for a few trolleys.

(v) *Nurses' station*

93. This should be positioned for ease of supervision of the patients. As it should be closely associated with the clean utility room/area, the necessary equipment can be limited to a desk or table, a chair and a telephone.

(vi) *Pantry*

94. This will be required for the preparation of beverages and possibly light meals. It should be equipped with a sink and drainer, an instant hot-water boiler, a grill or toaster, a boiling ring, a small refrigerator, a worktop, cupboard space for food, china, cutlery, etc., and space for trolleys and small refuse bins.

(vii) *Patients' lavatories and bathroom*

95. At least one w.c. and one lavatory basin for each sex should be placed close to the bed areas. At least one separate bathroom or shower will also be required.

(viii) *Storage*

96. Some provision (possibly cupboards) is required within the department for extra blankets, pillows, as well as the day-to-day stock of linen and expendable items.

(ix) *Circulation space*

97. The corridors should be at least 7 ft. wide in the clear.

(*d*) *Orthopaedic and fracture clinic* (if required)

(i) *Consulting rooms*

98. Consulting rooms of about 170 sq. ft., similar to the combined consulting-examination rooms in the general-purpose suite recommended for out-patient departments (see Hospital Building Note No. 12), are generally adequate.

99. The usual consulting room equipment is required for orthopaedic clinics, and should include a desk, chairs, couch, lavatory basin and x-ray viewing panels. As an alternative to a long mirror on the wall, it is sometimes possible to use the corridor linking the consulting and examination rooms as a suitable walkway.

(ii) *Examination and treatment cubicles*

100. As the examinations are frequently rapid, but patients may unavoidably take a long time undressing and dressing, it is convenient to provide examination and treatment cubicles in addition to the consulting rooms. Each doctor could then be allocated about three or four of these cubicles.

101. The cubicles should be about 8 ft. × 8 ft., which would be large enough for the patients to undress and dress, to have dressings removed for the doctor to examine the patients, and for the application of new dressings other than those which have to be done in the plaster room.

102. Some cubicles could contain a couch; others a chair for " sitting " patients or space for those who are on stretchers, trolleys or wheelchairs.

103. The cubicles should preferably be divided by curtains instead of partitions and doors as this allows for greater flexibility in use (e.g. use as single cubicles, or two cubicles together).

104. If these cubicles are planned adjacent to the examination and treatment cubicles in the accident and emergency department there is greater flexibility in use, and the clean and dirty utility rooms serving these cubicles can be shared.

105. (iii) *Plaster room*

106. (iv) *Plaster room stores, etc.*
(*a*) Splint store
(*b*) Plaster store
(*c*) Plaster mould store
(*d*) Plaster disposal lobby

For descriptions see paragraphs 77–81

107. It is preferable for the plaster room of the orthopaedic and fracture clinics to be planned with the departmental plaster room, either as one room or as a separate room nearby, to facilitate the sharing of plaster stores.

(v) *Sub-waiting space*

108. A sub-waiting space should be provided outside the rooms used for these clinics. There is usually a heavy " patient load " and many patients have wheelchairs or crutches. It is therefore advisable to allow a generous sub-waiting space. It is suggested that a minimum of 75 sq. ft. should be provided for each consulting room and a minimum of 150 sq. ft. for the plaster room. A table and chair may be required for the receptionist.

(vi) *Storage*

109. Provision must be made for the day-to-day stock of linen, blankets and expendable items. The storage for surgical appliances should be adjacent to the fitting room.

(vii) *Circulation space*

110. The corridors should be at least 7 ft. wide in the clear.

(e) Teaching hospital increment

(i) *Teaching room*

111. Adjoining the consultants' office there should be a teaching room of about 250 sq. ft. with wall space for charts, etc. One wall of the room might be arranged to open by sliding or folding doors into the consultants' office so that the two rooms can be used to accommodate larger gatherings.

(ii) *Examination and treatment rooms/cubicles*

112. These should be as described in paragraphs 55–58, but the total number of rooms/cubicles will need to be increased by between a quarter and a third.

(iii) *Students' room*

113. This should be available for students in which to study or relax during quiet periods. It should be equipped with a table(s), chairs, a couch and bookcases.

(iv) *Circulation space*

114. Additional circulation space will be required for this accommodation.

B. Additional accommodation

(a) Diagnostic x-ray unit (see paragraph 25)

115. For detailed information see Hospital Building Note No. 6, " Diagnostic x-ray department ".

(i) *Patients' undressing cubicles*

116. When designing cubicles it should be borne in mind that some patients require assistance in undressing. A minimum floor area of 15 sq. ft. will be needed per cubicle.

(ii) *Radiodiagnostic room(s)*

117. This will be equipped only for simple straightforward examinations but should be capable of accommodating a seriously injured patient on a stretcher. A room of about 350 sq. ft. is recommended.

(iii) *Dark room (or processing room)*

118. This should adjoin the x-ray room(s). Consideration should be given to the installation of an automatic processing unit where this can be justified by the volume of work.

(iv) *X-ray viewing area*

119. This should adjoin the dark room.

(v) *Sub-waiting area*

120. A sub-waiting area should be grouped with the x-ray facilities for patients awaiting x-rays.

(vi) *Storage*

121. The x-ray facilities will require storage for films, chemicals and a mobile x-ray unit. As a guide the largest size of mobile x-ray machine now in use is approximately 4 ft. 6 in. long by 2 ft. 6 in. wide by 6 ft. 4 in. high.

(b) Pathology laboratory

122. Unless the main department of pathology is sufficiently close to the accident and emergency department to provide an immediate service it will be necessary to provide a sub-laboratory capable of accommodating two or three persons and equipped for cross-matching, etc.

(c) Cleaners' room

123. It may be necessary to provide a cleaners' room with the preparation, recovery and short-stay unit. This room should be as described in paragraph 64 above.

(d) Sister's office for orthopaedic and fracture clinic

124. In many cases it will be necessary to provide a separate office for the sister-in-charge of the orthopaedic and fracture clinic. This room should be at least 100 sq. ft.

(e) Treatment room for orthopaedic and fracture clinic

125. A general-purpose treatment room may be needed to supplement or take the place of an operating theatre for treatments such as orthopaedic manipulations, etc., which do not have to be carried out under strict aseptic conditions. This room should be about 170 sq. ft. It should be equipped with a couch and chair(s), an adjustable lighting fitting and a lavatory basin with elbow-operated taps.

(*f*) *Fitting room for surgical appliances*

126. Many orthopaedic patients require surgical appliances which are fitted at the hospital. A room of at least 120 sq. ft., which can be divided by curtains or movable screens, should be provided for this purpose. The room should be adjacent to the consulting suites occupied by this clinic, thus limiting the distance the patient has to walk and also providing easy access for the doctor who may want to consult with the surgical appliance fitter. If the department is busy it will be necessary to provide two of these rooms or one larger room. In considering the location of this room it should be remembered that some patients may come for a fitting without visiting a clinic.

127. Some sub-waiting space should be provided outside this room.

(*g*) *Clean and dirty utility rooms*

128. In some cases it may not be possible for the orthopaedic and fracture clinics to be planned immediately adjacent to the departmental examination and treatment areas (paragraph 55) and it would then be impossible for the utility areas to be shared. Therefore additional clean and dirty utility rooms may be required and they should be as described in paragraphs 59 and 60.

(*h*) *Research room*

129. A room of about 300 sq. ft. may be required for research purposes in some teaching hospitals. It should be capable of division into two parts and should adjoin the pathology laboratory (if one is provided).

V. Engineering services

130. The engineering services should be designed and installed to ensure the minimum interruption of services and disturbances to the working of the department while repairs and maintenance are being carried out.

131. Facilities should be provided for the easy installation of meters should they at any time be required.

132. The following recommendations are based on the assumption that the department will be planned for natural ventilation and lighting and that the need for mechanical ventilation, apart from that required for special purposes such as in operating theatre suites, will be restricted to internal rooms.

133. In deciding upon the positioning and height of service points (taps) and socket outlets, due regard should be had to user requirements and to the need for labour saving.

Mechanical services

Heating and ventilation
General requirements

134. The department will be open for the full 24 hours each day throughout the year and the heating system should therefore be designed for continuous heating, day and night. The system will normally be part of the main hospital system, but where this is from a central hot-water heating system, it is preferable that a separate circuit be provided so that these rooms can be heated when the general heating system is not in use.

135. Space heating requirements should be calculated on the following recommended heating design temperatures and natural ventilation rates based on an outside temperature of 30°F:

Accommodation	*Temperature*	*Air changes per hour*
Treatment rooms	70°F	3
Resuscitation room Cleansing room Patients' changing room/undressing cubicles Radiodiagnostic rooms	70°F	2
Consulting rooms Examination and treatment rooms/cubicles Dark room Bed areas	65°F	3
Plaster room	65°F	6
Offices X-ray viewing room Fitting room Interview rooms Waiting areas and associated corridors Doctors' room Nurses' duty room Nurses' station Pathology laboratory Research room Patients' showers and lavatories Porters' room Teaching room Students' room	65°F	2
Entrance lobbies	60°F	3
Sterile supply and utility rooms Corridors Pantry Sluice, disposal and test rooms Cleaners' room Staff lavatories	60°F	2
Linen store	60°F	½
Equipment stores Plaster room stores/lobby	50°F	½

Operating theatre suites—See Hospital Building Note No. 26 and " Ventilation " below.

Heating

136. The conventional hot-water radiator heating

system has low installation and maintenance costs and is usually quite satisfactory.

137. In some rooms, such as consulting suites, wall-mounted hot-water flush radiant panels may be preferred.

138. Where there may be a high rate of air change or cold draughts due to frequent opening of outer doors (as in waiting spaces, corridor bays, etc.) thermostatically controlled fan-assisted convectors should be considered. These convectors should be fitted with suitable filters when they are used to re-circulate the air.

139. Radiators and radiant panels should normally be placed below windows and against exposed walls to counteract cold air currents, sufficient clear space being allowed beneath to facilitate floor cleaning when machines are used.

140. If ceiling heating systems are used they should conform to the recommendations of the Medical Research Council's Environmental Research Unit which may be found in the " Guide to Current Practice " of the Institution of Heating and Ventilating Engineers.

141. There are indications that floor heating as applied to hospitals may not be entirely satisfactory, and experience shows that this form should be used only in association with other types of heating.

Ventilation

142. Where a treatment room requires mechanical ventilation, a fresh air supply, filtered and warmed to the desired conditions, should be introduced. A filter of 95 per cent efficiency down to 5 microns is satisfactory but an additional coarse filter is necessary in districts where the air is dirty. Discharge from the rooms should be by means of a suitably placed low-level grille having a quiet light-weight flap valve in the ducting to the outside air; a slightly pressurised condition in the room when the door is closed should be maintained.

143. Plaster rooms should have balanced input and extract mechanical ventilation carefully designed to ensure efficient removal of smells.

144. Simple mechanical extract at high level should be provided in the ward pantry and at low level in sluice and dirty utility rooms; the discharge should be protected against back pressure from the wind and carried clear of the building.

145. Internal rooms should be mechanically ventilated to suit their individual requirements, internal lavatories should have mechanical extract; air inlet grilles are necessary where the ventilation is extract only.

146. The type of window selected should allow air infiltration without draught to lightly clad patients. Top opening windows at high level should be provided with a " minimum setting " notch or other adjustment to give control of the incoming air. In ceiling-heated rooms the incoming air should not be directed at the ceiling.

147. Radiodiagnostic rooms should be well ventilated and normally good natural ventilation with opening lights will suffice.

148. It is desirable to have means of ventilating photographic dark rooms to enable them to be aired occasionally. Larger rooms should be provided with mechanical extract fans to discharge processing smells to the outside. Small rooms used for cassette or camera loading may not need to be mechanically ventilated. Suitable cross ventilation is usually best obtained by placing light-proof inlet louvres at low level and having the extract fan at high level. The extract fan, which may be a two-speed propeller type, must always have suitable cowl protection from the weather and be placed to avoid back pressure from the wind. The cowl should also incorporate suitable light-proof protection.

149. In general the ventilating of operating theatres should be as described in Hospital Building Note No. 26, Operating Department.

150. Attention should be given to the avoidance of unnecessary heat gains in the theatre suite. Plant chambers should be ventilated so that there is no build-up of heat inside.

151. The theatre must be pressurised to prevent the ingress of air from the corridor, etc., and balanced in pressure with the sterilising area. There may be advantage in achieving a slightly reduced pressure in the anaesthetic and wash-up area by mechanical extraction of air at low level, thus stimulating a flow of air from the " clean " theatre areas.

152. The air supply to each theatre should be approximately 1,000 c.f.m., which usually corresponds to about 20 air changes. The temperature range is usually between 65°F and 70°F and the relative humidity is controlled between 50 per cent and 60 per cent.

Hot and cold water and drinking water services

153. These will normally be provided by connections to the main services to the hospital. For the hot-water supplies of small departments it may be more economic to have independent gas or electric water heaters.

154. Hot-water storage capacity should be based on meeting the maximum requirement of two hours and the calorifier battery rating should be based on a 3-hour recovery period.

155. The cold-water storage should be sufficient for 24 hours' requirements. Drinking water taps taken directly from the mains should be provided in the ward

pantry, resuscitation room, the main waiting area and one may also be required near the medicine cupboard. An automatic carton dispenser, using disposable cartons, may be considered for the main waiting area.

156. Cold-water pipes passing through warm humid rooms should be insulated to prevent condensation and consequent dripping.

157. Elbow-action taps having a mixed temperature outlet will normally be required except in the pantry, changing rooms and lavatories where normal pillar taps should be provided. For supplies to lavatory basins en suite with w.c's, a spray-mixing tap may be fitted.

158. Shower baths for patients should have the spray fitted at approximately shoulder height. They should be thermostatically controlled and should have a hand spray to enable feet washing, etc.

159. The hot-water system circulation should serve heated bed-pan cupboards, coils in the linen cupboards and drying cupboard for plaster moulds.

Steam supply

160. A steam supply to the department may be required. A mains pressure of 50 p.s.i. will cover all requirements and reducing valves can be used to suit the apparatus service—pipes and traps being sized to allow quick heating up.

Town gas

161. The decision to provide a gas service will depend on local conditions for the installation and cost. A gas supply may be required in the pantry and is desirable in the pathology laboratory and research room. The use of gas for burner points in test rooms is not essential since a methylated spirit burner may be used.

Piped oxygen and suction

162. The main advantages of a piped oxygen system are its immediate availability, absence of noise and labour in moving gas cylinders about the hospital, cleanliness and the economic advantages of purchasing gas either in large cylinders or in bulk. Normally, the oxygen supply system will be part of the system serving the main hospital, but exceptionally, if the system is an independent one serving the department, it will require its special chamber with easy access for replacement of cylinders or for the bulk supply vehicle. Points may be required in operating theatres, bed areas, treatment rooms, plaster rooms, resuscitation, anaesthetic and recovery rooms.

163. Similarly, the main hospital's piped vacuum system would be extended to the department and the connectors would normally be placed beside the connectors for the piped oxygen supply. Where a separate system is necessary, the vacuum cylinder and pump may be located in a plant room, with the pump exhaust led away outside, clear of the roof and opening windows.

Lift

164. In exceptional circumstances, where the accident and emergency department comprises more than one storey, a lift will be required, but it may be possible to use a lift installed in another department. A suitable size is 4,000 lb., with inside dimensions of the car of 5 ft. 5 in. (width) × 8 ft. 7 in. (length) × 7 ft. 0 in. (height). Accurate automatic floor levelling is essential.

165. All lifts should be silent in operation. Noise and vibration from the lift machinery should not be transmitted through the building. Car and landing doors should be as quiet in operation as possible.

Fire alarms and fire-fighting equipment

166. Information on fire alarms and extinguishers is given in B.S. Codes of Practice and in Hospital Technical Memorandum No. 16, Fire Precautions. Advice on the fire-fighting installation proposed should be sought from the local fire authority.

167. The need for fire precautions may influence the design of engineering services, especially ventilation schemes. Due regard should therefore be given to these requirements in the early stages of design.

Electrical installation

General

168. The electrical installation will include wiring and equipment for general and special lighting, socket outlets, heating, ventilating, telephones, clocks and call systems. Normal standards of electrical installation will apply, but for operating theatres the installation should comply with the recommendations contained in Hospital Building Note No. 26, Operating Department. Where explosive anaesthetic gases are used anti-static floors are necessary and the electrical installation should comply with the recommendations of the Ministry of Health's "Report on Anaesthetic Explosions", and Hospital Technical Memorandum No. 2, Anti-static Precautions: Flooring in Anaesthetising Areas.

Supply and distribution

169. Guidance on factors affecting the supply and distribution arrangements is available in Hospital Technical Memoranda, No. 7 on Electrical Services: Supply and Distribution, and No. 8 on Safety Code for Electro-Medical Apparatus. Generally the electrical supply will be provided by a sub-main circuit from the mains intake and distribution centre to a switch room within the department. Local distribution boards should be situated so as to minimise the length of circuit wiring. They should be in well-ventilated positions, preferably accessible from corridors, and fitted with locks where

necessary; it is an advantage if they can be reached from a standing position. H.R.C. fuses are recommended for general use. Spare ways and fuses should be provided for local extension and space should be allowed for future additional units.

170. Conduit and cables should generally be concealed, service ducts being provided wherever practicable; external conduit and fittings should be of weatherproof materials.

Artificial lighting

171. Lighting fittings should be designed to avoid glare, and to facilitate cleaning and maintenance.

172. The choice between tungsten filament and fluorescent lighting depends, apart from personal preference, on the purpose for which the lamps are to be used. Fluorescent lighting may be justified where higher intensities are required for long periods, e.g. for use in internal rooms which lack natural daylight. In rooms such as consulting suites and treatment rooms, specially selected fluorescent tubes will be required where colour identification is particularly important.

173. The following table gives recommended values of general illumination for various rooms:

Accommodation	*Average lumens/sq. ft. at working level*
Pathology laboratory and Research room	25
Examination and treatment rooms/cubicles Consulting rooms Resuscitation rooms Plaster room Fitting room Teaching room	20
Sister's room Doctors' rooms Nurses' station Nurses' duty room Students' room Offices Cleansing room Radiodiagnostic room	15
Utility rooms Pantry Test room Waiting areas Porters' room Interview room X-ray viewing area	10
Changing rooms/undressing cubicles Equipment rooms, stores Sluice, disposal room Enclosed ambulance bay Lavatories and cleaners' room Plaster lobby	7†
Corridors, staircases and entrance lobbies	7†*
Dark room (white lighting)	5
General ward lighting	3†
Minimum in centre of ward	10
Bedhead lighting	15

* This figure may be increased where adjacent intensities are high.

† The standard given is at floor level.

Special lighting

174. The operating theatre suite will require lighting and power to the same standards as for main operating theatre suite (see Hospital Building Note No. 26, Operating Department). In anaesthetic rooms enclosed lighting fittings having a glare index of 10 to 12 should be satisfactory.

175. In addition to the general lighting in the treatment rooms a wall- or ceiling-mounted adjustable spotlight will be required. It should have adequate movement, be separately switched, and placed so that the movement of patients and staff should not be obstructed.

176. An emergency lighting system should be installed in accordance with Hospital Technical Memorandum No. 11, Emergency Electrical Services.

Lighting in wards

177. During normal evening hours it is recommended that the standard of illumination provided at the bedhead (at normal bed height) by the general lighting should be 3 lumens per square foot. The illumination in the centre of the circulation space (usually between the feet of the beds) should be 10 lumens per square foot.

178. Night lighting should provide an indirect illumination on the bed of 0·01 lumens per square foot and for the rest of the ward just sufficient light to enable staff to move easily around.

179. An illumination of 3 lumens per square foot should be adequate for the nurse's desk provided that the nurse does not have frequently to enter ancillary rooms lighted to much higher standards of illumination.

180. The avoidance of glare is important and a glare index of not more than 13 is recommended. All lights should be screened from the beds and any part of a lighting fitting visible from a bed should have a brightness of not more than 1 ft. lambert. These restrictions should be applied also to lighting in corridors, circulation space, etc., outside the ward but visible from the beds through unscreened glazing.

181. Tungsten filament lighting is usual but fluorescent lamp fittings with downward louvres and opaque sides have been found suitable for centre of ward illumination. The lamps should have acceptable colour rendering. Night lights of low wattage tungsten filament may be incorporated in the centre fittings; alternatively, flush wall-mounted units placed below bed level and faced with reeded or coloured glass covers may be preferred.

182. Single-bed wards are usually lighted satisfactorily by a single tungsten light fitting.

183. Bedhead lights should be adjustable and fitted with a simple on/off wall switch or one incorporated in

the lighting fitting. Provision should be made for separately switched low intensity night lighting circuits. A table lamp with dimmer is needed for the nurses' station.

184. Drug cupboards should be provided with red indicating lights to give visual indication when the cupboard is not locked. A parallel indicating light should be installed in the sister's room, except where this might constitute a spark risk and an explosion hazard by contact with flammable vapour (see B.S. 2881, 1961).

185. Lighting fittings in waiting areas should be selected to give a pleasing effect. Corridor lighting should be of the enclosed type. Staircase lights should be sited for easy cleaning and maintenance, and the switch positions should be carefully selected. Signs posting the external entrance of the department should be illuminated so that they are clearly visible at night and weatherproof fittings and accessories should be used in all external situations.

Socket outlets

186. Sufficient 13-amp. universal type, switched, shuttered socket outlets on ring or spur circuits should be provided to allow each portable appliance which is likely to be used at the same time to be connected to a separate outlet, and for the convenient use of domestic appliances, on the basis that the flexible leads from these should not exceed 30 ft. in length.

187. Fixed appliances should be permanently wired from fused spur boxes. Appliances whose rating is in excess of 13 amps. should be permanently connected and supplied from separate final sub-circuits and independently switched.

188. Electro-medical apparatus and non-luminous heating appliances should be fitted with indicating lights to show when they are in use. Fixed apparatus should be connected to the mains by permanently installed wiring. Electro-medical apparatus which contains equipment operating at mains potential should be effectively earthed and for safety the amount of exposed metalwork within reach of patients should be minimised.

189. The following socket outlet distribution is suggested:

Resuscitation rooms	1 twin socket outlet for x-ray viewing screen 2 twin socket outlets for equipment (with indicating lights and switches) 1 socket outlet for general purpose, plus provision for fixed electrical apparatus.
Examination and treatment rooms/ cubicles	1 twin socket outlet for x-ray viewing screen 1 twin socket outlet for equipment (with indicating lights and switches) 1 socket outlet for general purpose, plus provision for fixed electrical apparatus.
Plaster room	1 socket outlet for x-ray viewing screen 2 twin socket outlets for equipment (with indicating lights and switches) 2 socket outlets for general purpose
Consulting rooms	1 twin socket outlet for x-ray viewing screen 1 twin socket outlet for equipment (with indicating lights and switches)
Single-bed ward, rooms or bays	1 twin socket outlet in addition to one for bed position
Multi-bed ward, rooms or bays	1 twin socket outlet shared between 2 beds plus 1 socket outlet for general purpose
Doctors' room Sister's room Nurses' station Nurses' duty room Students' room Offices Teaching room Fitting room	1 twin socket outlet
Pantry	To suit number of appliances plus one or two for future requirements (depending on size of room) Socket outlets should include indicating lights and switches
Radiodiagnostic rooms	2 socket outlets for general purposes
Dark room	1 twin socket outlet plus 1 socket outlet (may be varied according to room size)
X-ray viewing area	To suit equipment plus 1 twin socket outlet for general purposes
Pathology laboratory	1 twin socket outlet per 3 ft. run of bench top
Clean utility rooms Dirty utility rooms Sluice and test room	1 socket outlet for general purpose
Waiting places/ corridors, etc.	Socket outlets to be provided for the convenient use of domestic appliances
Operating theatre suites	See Hospital Building Note No. 26, Operating Department

Provision for mobile x-ray apparatus

190. Facilities for the use of mobile x-ray apparatus are necessary in resuscitation room, plaster room, radiodiagnostic room and operating theatre.

Mains voltage outlets for mobile x-ray apparatus

191. X-ray apparatus calls for heavy current for only very short periods (normally less than one second) and for satisfactory operation it is necessary that the sub-circuit should be capable of carrying these heavy currents without undue voltage drop. There is no likelihood of conductors becoming heated in normal use and there is no real advantage in using heavy-duty outlets which are expensive and cumbersome. Indeed there is ample experience to show that 13 A outlets are satisfactory for equipment having ratings up to 100 mA and 30 A outlets for higher ratings.

192. The two-way feed of a ring circuit will assist in reducing voltage drop and the circuit fusing (30 A) is adequate for sets rated up to 100 mA. An overload contactor is provided on the x-ray apparatus which will give adequate protection against any overload fault.

193. Mobile x-ray apparatus with ratings over 100 mA have recently been introduced and if likely to be used in wards, heavier duty cables and sockets will be required. For example, for a mobile x-ray apparatus having an output up to 300 mA, a 7/·064 in. ring circuit with 30 A sockets has been found to be satisfactory.

Telephones

194. Telephone facilities for internal and external calls will form part of the hospital telephone system and will normally be provided in the consultants' office, doctors' room, sister's room, nurses' station, nurses' duty room, resuscitation room, reception office and porters' room. Telephones should be desk pattern and positioned as far as possible so that conversation cannot be heard by the patient. For sisters and nurses they should be fitted in parallel with an indicating call light which is easily visible and a quiet bell which, when desired, may be switched out of circuit independent of the call light.

195. One or more call boxes or booths with G.P.O. telephones should be sited in or adjacent to the main waiting space.

Electric clocks

196. Electric clocks will normally be required in the waiting areas, nurses' station, reception and treatment rooms. Clocks in treatment rooms should be synchronous with a sweep second pointer. Where an impulse clock system exists it should be extended to these areas and silent clocks should be used.

Staff location system

197. A wired staff location system, radio or induction system should be provided as part of the general staff location system of the hospital. The system should enable staff to be called at night without disturbing the patients.

Patients' call system

198. Facilities will be required in the bed areas by which patients can call the nurse: indicators and buzzer should be provided at the nurses' stations. A bell push should also be provided in patients' toilets adjoining ward accommodation.

Anti-static precautions

199. The Department's Hospital Technical Memorandum No. 2 gives information on the need for anti-static floors and other precautions in rooms where explosive anaesthetic gases may be used.

Sterilising equipment

200. On the assumption that a central sterile supply department will provide theatre instruments as well as sterile packs for general use, sterilising equipment should not generally be required though in some cases it may be considered necessary to provide a small pressure steam steriliser for the immediate sterilisation of instruments.

201. If a pressure steam steriliser is required a suitable size would be 12 in. in diameter by 20 in. in length, and this can be in the sterile supply room.

202. There is no need to use high-vacuum sterilisers since problems of steam penetration and drying should not arise. The operation is, therefore, simple, and can be controlled safely by hand. This equipment uses steam at an operating gauge pressure of 32 p.s.i. at the steriliser stop valve, and should be in accordance with the requirements of B.S. 3233 (1960) and designed for air to be removed by downward displacement.

203. Pending the publication of a B.S. Standard for similar equipment that is electrically heated, consideration may be given to the provision of electrically heated pressure steam sterilisers which have proved to be satisfactory in use for stand-by services on failure of the steam supply.

204. The steriliser may be free-standing or bench mounted and the exterior of the shell should be efficiently lagged and covered with a polished metal outer casing. Steam and condensate piping should also be lagged to protect the user and reduce the transmission of heat into the room.

205. A bottled sterile water supply is now preferred to the use of hot and cold-water sterilisers, and heated cupboard(s) will be needed in the sterile supply room to contain an adequate number of bottles warmed to the correct temperature.

APPENDIX I

1. Method of arriving at the total number of patients per 3-hour peak period.

An accident and emergency department should be designed to cope with a load of patients which frequently occurs in busy periods. As three hours seems the shortest period for which it is practicable to assess the load, an average peak period of three hours is assumed in the calculations below.

The Scottish Home and Health Department have studied the work and records of a number of departments in the United Kingdom and have put forward the following interim assumptions pending the completion of their analyses.

Calculations of patient load

(i) Thirty per cent of the estimated average daily load of new patients may arrive in the peak 3-hour period.

(ii) Return visits will be kept to a reasonable minimum, but since there will be variations between hospitals, alternatives have been taken into account.

A. return visits equal initial visits and 75% of return patients are dealt with in the 3-hour period

B. return visits equal initial visits and 50% of return patients are dealt with in the 3-hour period

C. return visits are 1½ times initial visits and 50% of return patients are dealt with in the 3-hour period.

The possibility of 75% of return patients being dealt with in the 3-hour period has not been computed for alternative C since, with a higher ratio of return patients, the load would be spread as much as possible.

TABLE 1

Method of calculating patient load in 3-hour peak period

	Number of new patients per day								
	50			100			150		
	Number of patients in 3-hour peak period								
	N.P.	*R.P.*	*Total*	*N.P.*	*R.P.*	*Total*	*N.P.*	*R.P.*	*Total*
A. 30% of estimated average of new patients may arrive in 3 hours ..	15			30			45		
Ratio of 1 return patient to 1 new patient ..		(50)			(100)			(150)	
75% of return patients occur in 3 hours ..		38			75			113	
Return patients and new patients			53			105			158
B. 30% of estimated average of new patients may arrive in 3 hours ..	15			30			45		
Ratio of 1 return patient to 1 new patient ..		(50)			(100)			(150)	
50% of return patients occur in 3 hours ..		25			50			75	
Return patients and new patients			40			80			120
C. 30% of estimated average of new patients may arrive in 3 hours ..	15			30			45		
Ratio of 1½ return patients to 1 new patient		(75)			(150)			(225)	
50% of return patients occur in 3 hours ..		38			75			113	
Return patients and new patients			53			105			158
TOTAL NUMBER OF PATIENTS	Under 60 in 3-hour peak period			Under 110 in 3-hour peak period			Under 160 in 3-hour peak period		

In deciding whether a department is more likely to be one where 50% or 75% of the return load is dealt with in the 3-hour peak period it is important to consider whether the figures for the return load include attendances at a fracture clinic. Approximately 25% of the total return visits are fracture cases. In the Tables of Accommodation the orthopaedic and fracture clinic has been assessed separately.

2. Number of staff per 3-hour peak period.

From the observations of the Scottish survey the following assumptions for staffing are made, based on the mean times taken for doctors to deal with new patients and return patients.

Indications are that a doctor dealing only with new patients would require nursing services to the equivalent of about 1½ nurses on duty with him and a doctor dealing only with return cases would require 2½ nurses on duty. Broadly, a scale of two nurses on duty per doctor should be aimed at as the peak staff period. This will vary with particular circumstances, e.g. three nurses per doctor are probably required for a septic clinic.

TABLE 2

	Total number of patients per 3-hour peak period		
	Under 60	Under 110	Under 160
Number of doctors (approximately)	2	3 or 4	5 or more
Number of nurses (approximately)	4 or more	6 or more	10 or more

APPENDIX II

Tables 1, 2 and 3 show the recommended accommodation for three typical sizes of department based on the total number of patients dealt with in a 3-hour peak period. This cannot by itself be a wholly accurate guide to the amount of accommodation required: the type of patient (e.g. proportion of trivial cases) must also be taken into account in deciding which of the three groups the department falls into. Slight variations within each group may also be necessary to meet local requirements.

Table 4 shows the accommodation required for the orthopaedic and fracture clinic, based on the number of " doctor sessions ", Table 5 the teaching hospital increment.

TABLE 1

A. Basic accommodation

(*a*) *Departmental accommodation*

Type of room	*Minimum individual room size (sq. ft.)*	*Total number of patients in 3-hour peak period*		
		60	110	160
		Number of rooms and/or area		
(i) Entrance for stretcher patients ..		1	1	1
(ii) Entrance for ambulant patients ..		1	1	1
(iii) Reception office and discharge office ..	60/100	1 (60 sq. ft.)	1 (80 sq. ft.)	1 (100 sq. ft.)
(iv) Porters' room or station	150	1	1	1
(v) Trolley and wheelchair store or area ..	150	1	1	1
(vi) Waiting areas				
(*a*) Main waiting } (*b*) Sub-waiting }	800/1,400	800 sq. ft.	1,100 sq. ft.	1,400 sq. ft.
(vii) Patients' lavatories: male		1	1	1
female		1	1	1
(viii) Interview room	100	1	1	1
(ix) Staff accommodation				
(*a*) Staff lavatories: male		1	1	1
female		1	1	1
(*b*) Duty doctors' room	120/150	1 (120 sq. ft.)	1 (150 sq. ft.)	1 (150 sq. ft.)
(*c*) Sister's room	100	1	1	1
(*d*) Nurses' duty room	100/120	1 (100 sq. ft.)	1 (120 sq. ft.)	1 (120 sq. ft.)
(*e*) Consultants' office	150	1	1	1
(x) Resuscitation room	250	1	1	1
(xi) Examination and treatment rooms/ cubicles	120	5	7	8
Examination cubicles	60	5	7	8
(xii) Clean utility room	100	1	1	1
(xiii) Dirty utility room	100	1	1	1
(xiv) Sluice and test room	80	1	1	1
w.c.	20	1	1	1
(xv) Cleansing room	120	1	1	1
(xvi) Storage	60	1	1	1
(xvii) Cleaners' room	50	1	1	1
(xviii) Circulation space				

TABLE 2

A. Basic accommodation

(*b*) *Minor operating theatre suite and plaster room*

Type of room	*Minimum individual room size (sq. ft.)*	*Total number of patients in 3-hour peak period*		
		60	110	160
		Number of rooms and/or area		
(i) Operating theatres	325	2	2	2
(ii) Anaesthetic room	170	1	1	1
(iii) Scrub-up and gowning area	100	2	2	2
(iv) Sink or disposal room	110	1	1	1
(v) Sterile supply room	120	1	1	1
(vi) Changing rooms for theatre staff				
male		1	1	1
female		1	1	1
(vii) Storage	60	1	1	1
(viii) Plaster room	250/390	1 (250 sq. ft.)	1 (320 sq. ft)	1 (390 sq. ft.)
(ix) Plaster room stores, etc.				
(*a*) Splint store	60	1	1	1
(*b*) Plaster store	60	1	1	1
(*c*) Plaster mould store	60	1	1	1
(*d*) Plaster disposal lobby	60	1	1	1
(x) Sub-waiting space for plaster room (plus additional for theatre if required) ..	150	1	1	1
(xi) Cleaners' room	50	1	1	1
(xii) Plant room	500	1	1	1
(xiii) Circulation space				

TABLE 3

A. Basic accommodation

(*c*) *Preparation, recovery and short-stay unit*

Type of room	*Minimum individual room size (sq. ft.)*	*Total number of patients in 3-hour peak period*		
		60	110	160
		Number of beds		
(i) Bed area: single	120	8	10	12
multiple	100			
			Number of rooms	
(ii) Changing cubicles	200	1	1	1
(iii) Sluice and disposal room	100	1	1	1
(iv) Clean utility area	100	1	1	1
(v) Nurses' station				
(vi) Pantry	80	1	1	1
(vii) Patients' lavatories: male		1	1	1
female		1	1	1
Bathroom	80	1	1	1
(viii) Storage	60	1	1	1
(ix) Circulation space				

TABLE 4

A. Basic accommodation

(*d*) *Orthopaedic and fracture clinic*

Type of room	*Minimum individual room size (sq. ft.)*	*Number of "doctor sessions"*			
		18	27	36	45
		Number of rooms and/or area			
(i) Consulting room	170	2	3	4	5
(ii) Examination and treatment cubicles ..	60	6–8	9–12	12–16	15–20
(iii) Plaster room	250/390	1 (250 sq. ft.)	1 (320 sq. ft.)	1 (390 sq. ft.)	(1 390 sq. ft.)
(iv) Plaster room stores, etc.					
(*a*) Splint store	60	1	1	1	1
(*b*) Plaster store	60	1	1	1	1
(*c*) Plaster mould store	60	1	1	1	1
(*d*) Plaster disposal lobby	60	1	1	1	1
(v) Sub-waiting area for each consulting room (min. 75 sq. ft.)		150 sq. ft.	225 sq. ft.	300 sq. ft.	375 sq. ft.
Sub-waiting area for each plaster room (min. 150 sq. ft.)	150	1	1	1	1
(vi) Storage	120/300	1 (120 sq. ft.)	1 (180 sq. ft.)	1 (240 sq. ft.)	1 (300 sq. ft.)
(vii) Circulation space					

TABLE 5

A. Basic accommodation

(*e*) *Teaching hospital increment*

Type of room	*Minimum individual room size (sq. ft.)*	*Number of rooms*
(i) Teaching room	250	1
(ii) Examination and treatment rooms ..	120	2
Cubicles	60	2
(iii) Students' room	120	1

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32	Psychiatric ward (type 2) and pre-discharge (hostel type) ward	5s 0d (5s 6d)

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